INSECTS OF MICRONESIA
Heteroptera: Pentatomoidea[1]

By HERBERT RUCKES

RESEARCH ASSOCIATE, DEPARTMENT OF ENTOMOLOGY
AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK
EMERITUS PROFESSOR OF BIOLOGY, CITY COLLEGE OF NEW YORK

INTRODUCTION

The Pentatomoidea consists of the families Plataspidae, Cydnidae, Pentatomidae, Acanthosomidae, Phloeidae, Urostylidae, Aphylidae, and Lestoniidae. In this classification I am following the terminology proposed by China and Miller (1955, Ann. Mag. Nat. Hist. XII, **8**: 257-267). Of these various families, representatives of the Phloeidae, Urostylidae, Lestoniidae, and Aphylidae have not, as yet, been recorded from Micronesia. The Phloeidae, represented by two genera, are found only in Brazil. The Urostylidae, however, are native to India, China, Japan, Australia, the Philippines, and intermediate islands such as Borneo and Java. It is rather surprising that examples of this family have not been taken from Micronesia since the other pentatomoid fauna of these islands is, for the most part, derived from the nearby Australian, Asian, and adjacent insular regions where the Urostylidae occur. Aphylidae and Lestoniidae are strictly Australian families, each represented by a single genus. The remaining families have varying representation in the Micronesian fauna.

I wish to take this opportunity to express my sincere thanks to Miss Marjorie Statham, of the technical staff of the Department of Entomology of the American Museum of Natural History, for generously donating her time and ability to make the fine drawings that accompany this report. Her gratuitous services are, indeed, greatly appreciated. Thanks are also extended to Miss Setsuko Nakata, of the Bernice P. Bishop Museum staff, for editing and preparing the typescript of this article for publication.

Specimens studied in this survey are from the collections of Kyushu University (KU), Bernice P. Bishop Museum (BISHOP), United States National Museum (US), Chicago Natural History Museum (CM), and

[1] This represents, in part, Results of Professor T. Esaki's Micronesian Expeditions (1936-1940), No. 117.

American Museum of Natural History (AM). A few specimens in the collections of the California Academy of Sciences and of R. L. Usinger were also examined. The following principal collectors were responsible for bringing together some 1,432 specimens in 26 genera and 36 species: G. E. Bohart, R. M. Bohart, H. S. Dybas, T. Esaki, R. J. Goss, J. L. Gressitt, Y. Kondo, N. L. H. Krauss, W. L. Necker, R. G. Oakley, Z. Ono, R. W. L. Potts, H. K. Townes, and R. L. Usinger.

Relatively few descriptive papers concerning the pentatomoids of Micronesia are available. For comparison of genera and species it was usually necessary to depend upon old and often unsatisfactory original descriptions to identify the specimens at hand. The principal paper of faunal and systematic value is that by Usinger (1946, Heteroptera, B. P. Bishop Mus., Bull. 189). Numerous papers cite the occurrence of various pentatomoids in Micronesia. Most, however, deal with the economic importance of these bugs as pests on native and introduced vegetation and are not particularly valuable in a systematic study.

DISTRIBUTION

From the distribution of the Pentatomoidea of Micronesia, as summarized in the table, it is evident that either these insects are absent or very poorly represented on many islands and atolls, or that collecting in general has been incomplete or disconnected and confined to only a few major islands and atolls.

Further inspection of the table shows that only three species, *Nezara viridula* (Linnaeus), *Geotomus pygmaeus* (Dallas), and *Platynopus melacanthus* (Boisduval), have a relatively widespread distribution. This is not too astonishing since *N. viridula* is essentially cosmopolitan and the other two are found abundantly throughout the western Pacific area and the numerous southeastern Asiatic islands. Other genera and species, represented by more isolated examples, trace their affiliations to the faunas of Japan, the Philippines, Australia, New Guinea, New Caledonia, Indonesia, and the Asiatic mainland, as well as the various islands of Polynesia.

Influence from Australia and New Zealand is shown in the fauna of the south Mariana Islands, Palau, Yap, and Truk as illustrated by the occurrence of *Glaucias inornatus* (Stål) and *Vitellus mucronatus* Stål in those places. *Oechalia schellenbergii* (Guerin-Méneville) is interesting in that it occurs in Australia, New Zealand, and through Polynesia, and has been taken from Wake, Eniwetok, Bikini, and Kwajalein in the Marshall Islands. It is now being recorded from Tarawa in the Gilbert Islands, thus closing the gap between its eastern Polynesian range and the more northern Marshall Islands. Apparently, this species has moved along a course from the southwest to the

Distribution List of Micronesian Pentatomoidea

	Micronesian Island Groups									Other Localities
			Carolines							
	Bonin and Volcano	Mariana	Palau	Yap	Truk	Ponape	Kusaie	Marshall	Gilbert	
Plataspidae										
1. Coptosoma variegata		X?								China, Burma, Philippines
2. Brachyplatys insularis*		X								
Cydnidae										
3. Geotomus pygmaeus	X	X	X	X	X	X	X	X	X	General Pacific area
4. Adrisa flavomarginata (?)		X								New Caledonia
Pentatomidae										
Podopinae										
5. Scotinophara minor*			X							
Scutellerinae										
6. Coleotichus marianensis		X								
7. Coleotichus breddini		X	X	X	X	X				
8. Tetrarthria variegata			X							India, Burma, Malay Peninsula, China, Borneo, Celebes, Philippines
9. Calliphara munda		X	X	X	X					China (?)
10. Chrysocoris sp. (?)		X								
Asopinae										
11. Ponapea arachnoides**						X				
12. Eocanthecona furcellata		X								Burma, Philippines
13. Platynopus melacanthus			X			X	X	X	X	New Guinea, Fiji, New Caledonia
14. Bulbostethus chrysopterus		X								
15. Bulbostethus transversalis*		X								
16. Oechalia schellenbergii								X	X	Australia, New Zealand, Polynesia
17. Parealda bouvieri		X								
Pentatominae										
18. Eysarcoris insularis	X		X	X						Bismarck Archipelago (?)
19. Parvacrena punctata**			X							
20. Piezodorus hybneri		X	X							India, Philippines, Japan, etc.
21. Catacanthus fuchsinus*				X						
22. Vitellus mucronatus			X							Australia
23. Pegala laevis		X								New Caledonia
24. Glaucias inornatus		X	X							Philippines
25. Glaucias lucidus*							X			
26. Glaucias robustus			X							
27. Glaucias fulvescens*		X								
28. Glaucias lyratum*		X								
29. Glaucias eburnopictus*		X								
30. Glaucias ponapensis*						X				
31. Glaucias amyoti		X	X	X	X	X				New Zealand, New South Wales
32. Nezara viridula	X	X	X	X	X	X				Cosmopolitan
33. Alciphron glaucus		X								New Caledonia
34. Antestia degenera			X							Burma, Philippines, etc.
35. Plautia cyanoviridis*	X									
Dinidorinae										
36. Megymenum affine					X					Papua and adjacent islands
Acanthosomidae										
37. Elasmostethus gracilis*		X								

* New species.
** New genus.

northeast and then around the eastern end of the Micronesian territory, leaving the central, western, and northwestern portion of that territory devoid of its representation.

The Asiatic mainland, including India, the East Indian islands, Borneo, New Guinea, the Philippines, and New Caledonia, apparently contribute to the Micronesian fauna as illustrated by such species as *Coptosoma variegata* (Herrich-Schaeffer), *Geotomus pygmaeus* (Dallas), *Platynopus melacanthus* (Boisduval), *Eocanthecona furcellata* (Wolff), *Antestia degenera* (Walker), *Piezodorus hybneri* (Fabricius), *Alciphron glaucus* Stål, and *Megymenum affine* Boisduval, all of which occur in one or several of the above mentioned areas. With the exception of *Geotomus* and *Platynopus,* records show that these species do not extend eastward through Micronesia beyond the central portion of the Caroline Islands and that most are found in the Mariana Islands and the Palaus. Genera like *Catacanthus, Plautia, Glaucias,* and *Scotinophara,* each with new species, can trace their sources of origin to the same localities.

The Bismarck Archipelago has possibly contributed *Eysarcoris insularis* Dallas to the Micronesian fauna, where it ranges from the Palau to the Bonin Islands, bypassing the west-central Carolines and the Marianas. If this source of origin is correctly interpreted, then *E. insularis* represents a species that has moved from east to west and thence northward, rather than one like *Oechalia schellenbergii,* which has moved from west to east.

China supposedly has contributed *Calliphara munda* Stål, a scutellerid, to the Micronesian population. This species is found in the Mariana Islands and the Carolines (Palau, Yap, and Truk). Some doubt exists as to whether or not Stål's types came from China. If they did, then we have here a species that definitely shows Oriental influence in Micronesia. At any rate the specimens of *Calliphara* that are at hand conform in all respects, with two minor exceptions, to Stål's characterization of the species. (See *C. munda* under the systematics section of this report.)

As a genus, *Glaucias* Kirkaldy extends over a wide portion of the southern and northwestern portion of Micronesia. *G. inornatus* (Stål) and *G. amyoti* (White), respectively from the Philippines and Australia, reach western Micronesia, being recorded from Palau and the Mariana Islands; five new species range eastward from there to Kusaie. Many other species of *Glaucias* are found in India, China, Indonesia, New Guinea, and on several islands of Polynesia. Here, then, is a genus well worth considerable study for determining degrees of speciation.

ENDEMISM

Certain islands of Micronesia show a greater degree of endemism than do others. Among the pentatomoids we find the largest number of native genera and species in the southern Mariana Islands, on Palau, Ponape, and Kusaie.

Two new genera are being described from Palau and Ponape, respectively; interestingly enough neither shows a precisely known affinity to any other genus in its respective subfamily. This, I am told, is a not too uncommon occurrence among insects in other orders in the same areas.

Very few of the numerous atolls of the vast Micronesian territory have given any evidence of an extensive pentatomoid fauna. Thus far, it is impossible to say, at present, to what degree speciation and subspeciation occur on these small bits of terrain.

SYSTEMATICS

As already stated, the superfamily Pentatomoidea consists of the Plataspidae, Cydnidae, Pentatomidae, Acanthosomidae, Phloeidae, Urostylidae, Lestoniidae, and Aphylidae. The following key, while fitted primarily for the Micronesian fauna and not particularly suitable for worldwide use, includes the four extraterritorial families for the sake of completeness.

In the original generic and specific descriptions that follow in this report, the various ratios given are dimensions measured through a binocular microscope, using a $\times$ 2 objective and a $\times$ 9 ocular fitted with a micrometer scale divided into 200 linear units (at this magnification equivalent to 5.0 mm.); they are not in terms of millimeters except as specified for holotypes and allotypes.

Superfamily PENTATOMOIDEA Reuter

Pentatomoidea Reuter, 1910, Soc. Sci. Fenn., Acta **37** (3): 79.

With the exception of the Urostylidae the following characteristics are common for the above families: scutellum prominent, apex almost always reaching to middle of abdomen at least, and frequently longer, its apical margin overlying or at least touching base of hemelytral membranes; clavus narrowed apically; head clypeated or peltate; antennal tubercles arising from beneath margins of head on maxillary plate; rostrum distinctly four-segmented (rarely with three or five segments); tarsi two- or three-segmented; antennae with three, four, or most commonly, five segments; hind wing with an antevannal vein, Cu lying in front of antevannal fold; abdominal segments 3 to 7 with a pair of trichobothria[2] adjacent to spiracles and behind a short transverse pseudosuture.

Key to Families of Pentatomoidea

1. Hemelytra much longer than body, folded at base of membrane; veins numerous, strongly chitinized, and more or less pectino-radiately arranged (fig. 1, *a*); tarsi two-segmented; body roundly ovate to suborbicular, very convex dorsally; scutellum covering most of dorsum........................**Plataspidae**

   Hemelytra not, or very slightly, longer than body, not folded at base of membrane; veins not heavily chitinized, usually less numerous, variously arranged but not pectino-radiately so (fig. 1, *b*); tarsi two- or three-segmented; body form variable........................2

[2] Except in some New World species of Podopinae, the Lestoniidae, and Aphylidae where only a single trichobothrium occurs.

2(1). Head small, lateral margins not trenchant (keeled); coreid-like in form; basal antennal segment much longer than head; antenniferous tubercles very much exserted; radial and medial veins of hemelytra divergent from base; scutellum not touching hemelytral membrane; frenum extended to apex of scutellum; metasternal ostiole with a well-elevated, spinous auricle (extraterritorial) .... **Urostylidae**

Head moderate to large, lateral margins trenchant, sometimes very obtusely so; radial and medial veins of hemelytra contiguous for at least half their length before becoming divergent; basal antennal segment not longer than head; antenniferous tubercles sometimes prominent but not strongly exserted; apex of scutellum touching or covering part of hemelytral membrane; frenum, when present, long or short but not reaching apex of scutellum; metasternal ostiole with a short spinous auricle or continued laterally as an evanescent canal 3

3(2). Abdominal venter with a pair of disc-shaped (sucking?) organs; tarsi two-segmented; head and pronotum strongly explanate, body very convex; testudiform in appearance (extraterritorial) .... **Lestoniidae**

Abdominal venter without a pair of disc-shaped organs; tarsi two- or three-segmented; not testudiform in appearance 4

4(3). Body very flat; head and pronotum explanate, foliaceous; connexivum explanate and divided into lobes; antennae and tarsi three-segmented; abdomen and thoracic sterna longitudinally furrowed; legs unarmed; metasternal ostiole opening submarginally, that is, laterally very remote from coxae (extraterritorial) .... **Phloeidae**

Body otherwise; antennae four- or five-segmented; connexivum not lobate-explanate; metasternal ostiole opening nearer coxae, with an auricle or a canal; abdomen with or without a longitudinal furrow; tarsi two or three-segmented 5

5(4). Body very convex above, concave beneath; lateral portions of mesonotum and metanotum visible from above; lateral angles of pronotum lobate and posteriorly produced (extraterritorial) .... **Aphylidae**

Body not concave beneath, variable above but not excessively domed; lateral portions of mesonotum and metanotum not visible from above; lateral pronotal angles not retrorsely lobate 6

6(5). Tibiae armed with two rows of strong, stout, usually black spines; forelegs fossorial; ammophilous or subterrestrial in habitat; tarsi three-segmented; antennae five-segmented; usually small, somewhat depressed, black, oval or elliptical, and shiny .... **Cydnidae**

Tibiae, if armed, with short delicate spines, usually setose; forelegs not fossorial; habitat and color varied, usually not solid black 7

7(6). Tarsi two-segmented; abdomen frequently obtusely keeled longitudinally; entire abdominal venter somewhat tectiform in contour; frenum very long, nearly reaching apex of scutellum .... **Acanthosomidae**

Tarsi three-segmented; abdominal venter sometimes moderately elevated but not distinctly keeled or tectiform in contour, sometimes rather flattish; frenum, when present, hardly extending beyond three-fourths marginal length of scutellum .... **Pentatomidae**

Family Plataspidae Dallas

Plataspidae Dallas, 1851, List Heteropt. Ins. Brit. Mus. 1:61.

Two genera, each with one species, are represented in Micronesia. These are easily separable by the following characteristics:

Head small, very strongly declivous, base narrower than anterior pronotal margin, apex narrowly rounded; ocelli four times as far apart as distant from eyes.. **Coptosoma**

Head larger, only moderately declivous, base as wide as anterior pronotal margin, apex broadly rounded; ocelli about twice as far apart as distant from eyes.. **Brachyplatys**

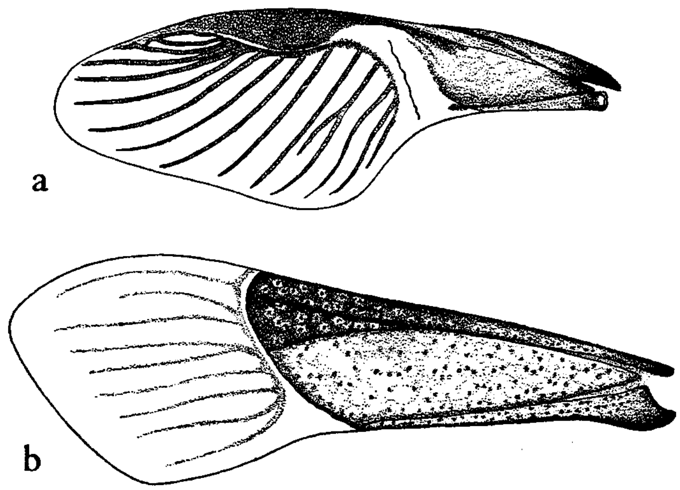


FIGURE 1.—**a,** *Brachyplatys insularis,* plataspid left hemelytron; **b,** *Platynopus melacanthus,* asopine left hemelytron.

Genus **Coptosoma** Laporte

Coptosoma Laporte, 1832, Essai Hem. IN Mag. Zool., 67, 73.

1. **Coptosoma variegata** (Herrich-Schaeffer).

   Thyreocoris variegatus Herrich-Schaeffer, 1844, Wanzen. Ins. **4**: 83, fig. 414.

   Coptosoma variegatum, Montandon, 1894, Mus. Civ. Stor. Nat. Genova, Ann. II, **14**: 134.

   Coptosoma variegatum, Montandon, 1896, Soc. Ent. Belg., Ann. **40**: 443.

   Coptosoma variegatum, Kuhlgatz, 1901, Archiv Naturgesch. (Beiheft), 226, 242.

A very small bug, easily recognized by its black color and very glossy appearance; with fulvous-colored legs and yellowish markings on head, pronotum and scutellum. Occasionally a specimen is entirely fulvous. Measurements: 2.5 mm. to 2.75 mm. long and almost as wide.

DISTRIBUTION: China, Burma, Borneo, Papua, Philippines and adjacent islands, S. Mariana Is.

S. MARIANA IS. GUAM: 15, Pt. Oca, May 1945, Bohart and Gressitt.[3]

Genus **Brachyplatys** Boisduval

Brachyplatys Boisduval, 1835, Voy. Astrolabe, Ent. **2**: 627.

2. **Brachyplatys insularis** Ruckes, n. sp. (fig. 2).

Roundly ovate, shining black above, punctures on head very fine and confused and confined to areas just before eyes; pronotum essentially impunctate; punctures on scutellum shallow, fine, very regularly distributed but widely spaced, very few if any across basal area, particularly centrally.

Head 2.25 times as wide through eyes as long medially (90:40), feebly impressed between eyes and tylus, apical margin not reflexed. Antennae fulvous throughout (basal segment slightly darker), less than half length of body; segmental ratios 13:4:16:22:23 (segment 2 very short and only one-fourth length of 3, segments 4 and 5 subequal). Ocelli small and twice as far apart as distant from eyes.

Pronotum 2.5 times as wide across humeri as long medially (150:60); anterior margin shallowly, subtruncately excavated centrally, then transverse behind eyes where margin is narrowly and feebly reflexed; anterolateral margin weakly convex-arcuate, extreme edge very narrowly reflexed; humeri slightly tumid and slightly produced beyond adjacent pronotal margin; posterolateral margin behind humeri sometimes feebly sinuate. Extreme perimeter of scutellum narrowly reflexed, posterior (apical) margin strongly sinuate in male, much less so in female. Exposed basal portion of hemelytra impunctate, surface rather irregular. Connexivum, when visible, sordid yellow to light fulvous.

Thoracic pleura, prosternum, and mesosternum opaque black, a submarginal pronotal band narrowly glossy; metasternum semiglossy. Under surface of head glossy, black laterally, area adjacent to bucculae sordid ivory or dull yellow; tip of ostiolar canal ochraceous to dull yellow. Abdominal venter glossy, medium to dark castaneous, submarginal area fulvescent, a fulvous to sordid yellow, triangular patch near posterior lateral corner of each segment; an impressed, irregular, submarginal line present in which lie the spiracles; median basal angle of sixth abdominal sternite acute in both sexes. Rostrum fulvous to brownish fulvous, apex reaching third abdominal segment; segmental ratios 16:30:23:23 (segment 2 longer than 3, 3 and 4 equal to subequal). Femora castaneous to dark castaneous, fulvescent at knees; tibiae and tarsi fulvous, tibiae sometimes with a thin reddish stripe along upper (sulcate) surface; coxae usually pale.

Apical aspect of male genital segment subcordate in outline, wider than long, exposed face concave, usually dark fulvous to medium brown or light castaneous; parameres outwardly curved, stoutly aciculate with a palmate brush of silvery hairs at base of each. Superior margin of female genital organs broadly sordid ivory to dull yellow, basal plates darker, triangular and somewhat tumid centrally.

Holotype, male, 4.75 mm. long, 3.6 mm. wide across humeri, 3.9 mm. wide across widest portion of scutellum; allotype female, 5.0 mm. long, 2.8 mm. wide across humeri, 4.2 mm. wide across widest portion of scutellum.

Holotype, male (US 65057), Rugi, Rota I., Mariana Is., on *Ipomoea,* June 1946, Oakley. Allotype, female (US), Rota, Rota I., Mariana Is., June 20, 1946, Townes. Paratypes, Saipan: Three males, 10 females, July 27, 1949, Kondo; female, Matansha, May 8, 1940, Yasumatsu and Yoshimura; 16 males,

[3] This is a questionable record as some Guam labels were inadvertently assigned to specimens collected on Okinawa. Thus, this species may actually be from Okinawa and not from the Mariana Islands.

three females, As Mahetog, Dec. 3, 1944, Dybas; 10 females, Apr. 22, 1945, Dybas; three males, four females, Papago area, Jan. 17-23, 1945, Dybas; 18 males, 13 females, Halaihai, Feb. 4, 1945, Dybas; 17 males, four females, Mt. Tapotchau, July 1, 1946, Townes; four males, eight females, Tuturam, Jan. 22, 1945, Dybas; three males, four females, southern part, Apr. 17, 1945, Dybas. Rota: Six males, eight females, June 20, 1946, Townes; two males, Oct. 22, 1945, Necker; male, June 26, 1946, Hosaka; male, Teteto, Sept. 5, 1937, Esaki; three males, nine females, Ongiano, June 27, 1946, Oakley; female, Sabana, June 19, 1946, Townes; female, southeastern part, Oct. 22, 1945, Necker; 26 males, 24 females, Rugi, June 29, 1946, Oakley. Guam: Male, two females, Ritidian Pt., May 29, 1945, Dybas; four males, seven females, Ritidian

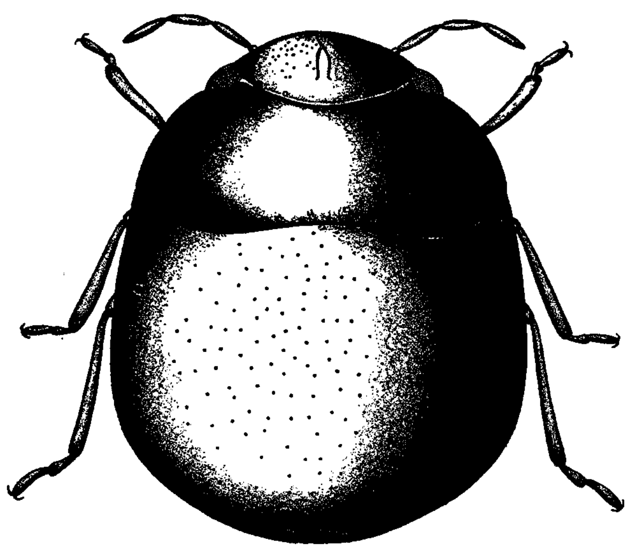


FIGURE 2.—*Brachyplatys insularis,* holotype.

Pt., Apr. 1945, Gressitt; male, Apr. 1946, Krauss; three females, Pt. Oca, Nov. 26, 1952, Gressitt; male, female, Mogfog, Aug. 8, 1945, Gressitt; female, Taguan Pt., July 10, 1945, Gressitt and Bohart; female, Yona, Apr. 1946, Krauss; male, Agat, Apr. 1946, Krauss; male, Mt. Alifan, Apr. 1946, Krauss; two males, two females, Fena Valley, Apr. 1946, Krauss; male, Mt. Lamlam, Nov. 27, 1952, Gressitt; two females, Mt. Lamlam, Oct. 1957, Krauss.

Other specimens, Saipan: Two, Jan. 23, 1945, Dybas; one, Aug. 28, 1951, Bohart. Rota: Nine, June 18, 1951, Bohart. Guam: Three, May 1945, Bohart and Gressitt; three, May 27, 1945, Dybas; three, Nov. 1, 1947, Dybas; two, Aug. 1952, Krauss; two, Sept. 1952, O'Lien.

DISTRIBUTION: S. Mariana Is. (Saipan, Rota, Guam).

This new species is about the same size and of the same contour as *B. pacificus* Dallas, to which it is closely related, and with which it may easily be confused. The distinguishing characteristics are found in the ochraceous or fulvous connexivum, the sordid yellow or old ivory color of the ventral portion of the head, the pale submarginal abdominal border, and the presence of sordid yellow or fulvous blotches on the posterior lateral areas of each abdominal segment. The puncturation on the scutellum is somewhat different than that found in *pacificus*.

Usinger (1946) lists *B. pacificus* Dallas from Guam. Earlier, Distant (1914, IN Sarasin and Roux, Nova Caledonia, Zool. **1**: 370) recorded the Mariana Islands, among other regions not in the Micronesian territory, as a habitat for the same species. These records probably are applicable to *B. insularis*. While the type of Dallas' species has not been examined, the specimens from which the above description was made do not conform altogether to his specifications. It is my conviction that the new species is a distinctly endemic one and merits its own name.

Family CYDNIDAE Billberg

Cydnides Billberg, 1820, Enum. Ins., 70.
Cydnida Stål, 1862, Stett. Ent. Zeitung **23**: 94.

Genus **Geotomus** Mulsant and Rey

Geotomus Mulsant and Rey, 1866, Hist. Nat. Pun. France, Pent., 34.

3. Geotomus pygmaeus (Dallas).

Aethus pygmaeus Dallas, 1851, List. Hemip. Brit. Mus. **1**: 120.
Cydnus rarociliatus Ellenrieder, 1862, Nat. Tijd. Ned. Ind. **24**: 139, fig. 7.
Aethus pallidocornis Vollenhoven, 1868, Fauna Ind. Ned. **3**: 17.
Aethus rarociliatus, Vollenhoven, 1868, Fauna Ind. Ned. **3**: 18.
Aethus pallidotarsus Scott, 1880, Ent. Soc. Lond., Trans. **1880**: 309.
Geotomus pygmaeus, Signoret, 1883, Soc. Ent. France, Ann., VI, **3**: 51, pl. 3, fig. 160.
Geotomus juncudus White, 1887, Ann. Mag. Nat. Hist. V, **20**: 110.
Geotomus subtristis White, 1887, Ann. Mag. Nat. Hist. V, **20**: 111.

DISTRIBUTION: Sumatra, Borneo, Java, New Guinea, New Caledonia and adjacent islands, Bonin Is., Mariana Is., Caroline Is., Marshall Is., Gilbert Is.

BONIN IS. Chichi Jima: Two, June 1949, Mead; one, May 1958, Snyder. Haha Jima: One, July 1949, Mead; one, June 1958, Snyder.

N. MARIANA IS. PAGAN: One, Apr. 1940, Yasumatsu and Yoshimura; two, Aug. 1954, Corwin.

S. MARIANA IS. SAIPAN: One, Nov. 1937, Esaki; one, Jan. 1948, Maehler; five, July 1945, Dybas; As Mahetog, three, Nov. 1944, Edgar; 11, Nov. 1944, Dybas; 25, Jan. 1945, Dybas; 22, Jan. 1945, Dybas; five, Apr. 1945, Dybas; three, May 1944, Dybas; one, Dec. 1944, Dybas; 14, Nov. 1945, Ducoff; 15, Dybas; Mt. Tagpochau, five, Nov. 1944, Edgar; one, Oct. 1947, Lange. TINIAN: Two, Mar. 1945, Dybas; one, June 1946, Townes. ROTA: One, Nov. 1937, Esaki; one, Oct. 1945, Necker. GUAM: Seven, July 1937, Oakley; 20, June 1945, Gressitt and Bohart; one, Sept. 1945, Wallace; 42, May-Aug. 1945, Bohart and Gressitt; one, Aug. 1952, Krauss.

PALAU. KAYANGEL: One, Sept. 1951, Gressitt. BABELTHUAP: Nine, Dec. 1947, Dybas; one, Oct. 1957, Krauss. KOROR: Two, Nov. 1947, Dybas; one, Sept. 1952, Beardsley; three, June 1953, Beardsley. PELELIU: One, Jan. 29, 1948, Dybas. ANGAUR: Four, Feb. 1948, Dybas.

YAP. YAP: Seven, July-Aug. 1950, Goss; one, Sept. 1939, Esaki.

TRUK. One, Dec. 1935, Ono; one, Nov. 1937, Esaki; two, June 1946, Townes; one, Sept. 1952, Beardsley; 48, Mar.-Apr. 1949, Potts.

PONAPE. Six, June-Sept. 1950, Adams; three, Feb.-Mar. 1936, Ono; one, Dec. 1937, Esaki; two, Aug. 1946, Townes; one, Jan. 1949; three, June 1950, Adams.

KUSAIE. One, Dec. 1937, Esaki.

MARSHALL IS. ENIWETOK: One, Aug. 1956, Tuthill. KWAJALEIN: One, Feb. 1958, Krauss. JALUIT: One, Nov. 1937, Esaki; three, May 1958, Gressitt.

GILBERT IS. BUTARITARI: One, Oct. 1957, Krauss. TARAWA: Two, Nov. 1957, Krauss.

This species is a small, rather regularly elliptical, shiny black bug that lives among grass roots and is frequently taken at light. The antennae are medium brown and the head and sides of the pronotum are provided with a few long, thin setae. It is from 3.75 mm. to 4.00 mm. long and about half as wide.

Genus **Adrisa** Amyot and Serville

Adrisa Amyot and Serville, 1843, Hist. Nat. Ins. Hemipt., 89.
Acatalectus Dallas, 1851, List. Hemip. Brit. Mus. 1: 110, 122, pl. 2, fig. 6.

4. Adrisa flavomarginata (Vollenhoven).

Acatalectus flavo-marginata Vollenhoven, 1868, Versl. Med. Kon. Akad. Wetens. Amst., Natuur. 2: 14, 177.

Adrisa flavomarginata, Signoret, 1881, Soc. Ent. France, Ann. VI, 1: 212, pl. 8, fig. 33.

Another cydnid, tentatively identified as *A. flavomarginata* by Usinger, is found in Guam. Three specimens are on record, all badly damaged. I have seen only one of these (from Barrigada); the legs and rostrum are fragmentary and the antennae are entirely missing, which makes accurate determination practically impossible. Some of the characters of this example match Vollenhoven's specifications, but others definitely do not. I am very doubtful whether these specimens are really *A. flavomarginata.* For one thing, the ocelli are obsolete and there are no yellowish margins on any parts of the body. Dallas, in describing his genus *Acatalectus* (later considered a synonym of *Adrisa*), states definitely that the ocelli are large and prominent, and Vollenhoven gives the specific name *flavomarginata* to designate the yellowish borders on the pronotum and hemelytra. This insect is included here for its record of occurrence in the Mariana Islands, it being understood that both generic and specific names applied are very questionable.

Family PENTATOMIDAE Leach

Pentatomides Leach, 1815, Hemiptera IN Brewster's Edinburgh Encycl. **9**: 121 (first American edition, 1832, **8**: 710).

Of some 11 or more subfamilies of the Pentatomidae, only four are thus far recorded from Micronesia. They may be separated by the following artificial key which is adjusted to the requirements of the local fauna.

Key to Subfamilies of Micronesian Pentatomidae

1. Frenum absent; scutellum very large, reaching abdominal apex; only basal half, or less, of hemelytra exposed; anterolateral pronotal margins straight or convexly arcuate; hind wing with a hamus; forms usually strongly convex above .... **Scutellerinae**

   Frenum present; scutellum moderate in size, sometimes large and reaching abdominal apex, in which case it is constricted in the middle and major portions of hemelytra are exposed; hind wings without a hamus 2

2(1). Scutellum large, reaching end of abdomen and broadly rounded there; frenum short, extending only one-fourth scutellar marginal length; anterolateral pronotal margins provided with a triangular denticle just before each humerus and another just behind anterior apical angle; coriaceous portion of hemelytron exposed but membrane covered by scutellum...... **Podopinae**

   Scutellum not reaching end of abdomen; frenum exceeding basal fourth of marginal length; both coriaceous and membranous portions of hemelytra exposed 3

3(2). First rostral segment free, not enclosed in a buccular canal; bucculae very low and united posteriorly; base of rostrum arising near tip of tylus; predatory forms .... **Asopinae**

   First rostral segment lying within buccular canal; bucculae usually well developed; base of rostrum arising a short distance behind tip of tylus; primarily phytophagus forms 4

4(3). Apex of scutellum not exceeding middle of abdomen; spiracle of first abdominal segment exposed; antennae four-segmented; margins of abdomen tuberculo-lobate ....**Dinidorinae**
Apex of scutellum exceeding middle of abdomen; spiracle of first abdominal segment covered by posterior margin of metapleuron; antennae five-segmented; abdominal margins varied, but not tuberculo-lobate......**Pentatominae**

SUBFAMILY PODOPINAE DALLAS

Podopidae Dallas, 1851, List Hemipt. Brit. Mus. **1**: 51.

Only one genus, with one new species, is recorded from Micronesia.

Genus **Scotinophara** Stål

Scotinophara Stål, 1867, Öfv. K. Vet.-Akad. Förh. **24**: 502, 523.

5. **Scotinophara minor** Ruckes, n. sp. (fig. 3).

Very small for the genus, 5.0 mm. long; fulvous with dense and regular darker punctures; head, anterior portion of pronotum, a basal subtriangular portion of scutellum, femora, thoracic pleura and sterna, and broad central portion of abdominal disc, black or dark fuscous; tibia basally and apically dark fulvous, a pronounced broad pallescent annulus centrally; tarsi pale fulvous, terminal segment darkening apically; antennae and rostrum rich fulvous throughout.

Head very slightly longer than wide between eyes (36:33); juga slightly wider apically than basally, equal in length to tylus, apex broadly, subtruncately rounded; ocelli prominent, about three times as far apart as distant from eyes, latter dark brown, ovate, and protruding laterally well beyond apical pronotal angles; external angle of antennal tubercles incurved; basal antennal segment very stout, longer than segment 2 and subequal to 3; segmental ratios 10:7.5:12:18:23; apex of rostrum just reaching metacoxae or slightly shorter.

Pronotum emarginate just before humeri, the spine there narrow, triangular; anterolateral margins weakly sinuate, subapical spine black, broadly triangular and weakly directed upward; margin between spines unarmed; the usual transverse, shallow sulcus present across pronotal disc behind cicatrices, the latter, and area between them, somewhat tumescent with lighter tints; punctures before sulcus black and somewhat congested, behind sulcus medium brown, regularly spaced and becoming finer laterally; pronotum about two and one-fifth times as wide across antehumeral spines as long medially (120:55). Head and anterior portion of pronotum weakly declivous.

Scutellum reaching abdominal apex, there evenly rounded; central basal, subtriangular area blackish, slightly elevated, darker color continued posteriorly as a vague, dark brown, longitudinal stripe; basal angles minutely foveolate and piceous; entad of each fovea is a larger sordid-ivory, calloused spot; punctures regularly spaced except on basal raised area where they are somewhat confused. Hemelytra uniformly punctured, without markings except for a minute discal laevigate pale spot. Connexivum barely visible, apical segmental angles roundly rectilinear, neither tuberculated nor produced.

Central portion of abdominal venter dark fuscous to black, with a broad submarginal fulvous band, finely and densely punctured with darker brown; spiracles darker brown, weakly elevated and each subtended by a minute tubercle.

Posterior face of male genital segment subsemicircular in outline, lateral margins densely and strongly entrorsely setose; lateral apical lobes feebly produced, their posterior faces indented; apical margin of capsule feebly sinuate centrally; submarginal wall bilaterally indented beneath each lateral apical lobe; heads of parameres narrowly subtriangular, vertical in posture, their apices not reaching superior margin of segment; proctiger obpyri-

form in outline, with a thin, chitinized, transverse ridge across basal end. Basal plates of female valves essentially transverse elliptical, their apical margins straight; median plate conspicuously impressed; apical plates more or less elongate rectilinear, their axes convergent but their tips well separated.

Holotype, male, 5.0 mm. long, 3.0 mm. wide across the antehumeral spines; allotype, female, 5.5 mm. long, 3.0 mm. wide across the antehumeral spines.

Holotype, male (US 65058), Koror, Palau Is., Sept. 1, 1952, Beardsley. Allotype female, same data as for holotype.

DISTRIBUTION: Western Caroline Is. (Palau).

This species is possibly related to *Scotinophara serrata* (Vollenhoven) which is found in the Philippines as well as the Netherlands East Indies. The new species is recognized by its much smaller size, in having less erose lateral margins on the pronotum, in being more or less uniformly brownish, and in having more protuberant eyes.

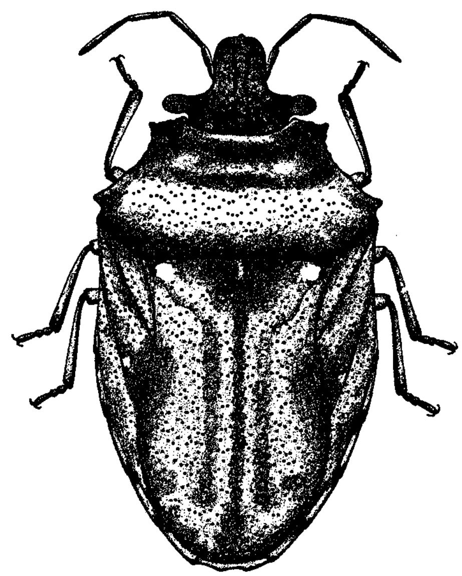


FIGURE 3.—*Scotinophara minor,* holotype.

SUBFAMILY SCUTELLERINAE LEACH

Scutellerida Leach, 1815, Hemiptera IN Brewster's Edinburgh Encycl. **9**: 121 (first American edition, 1832, **8**: 710).

Two of the recognized five tribes are represented in Micronesia and are readily distinguishable by the following key.

Key to Micronesian Tribes of Scutellerinae

Mesosternum and metasternum longitudinally sulcate, each bordered on each side by an elevated carina; pronotum and scutellum, when viewed from lateral aspect, forming a continuous arc; rostral segment 2 shorter than segments 3 and 4 combined .... **Elvisurini**

Mesosternum and metasternum not longitudinally sulcate, without lateral carinae; pronotum and scutellum, when viewed from lateral aspect, each with its own declivous curvature, leaving a distinct transverse groove between them; rostral segment 2 about equal to segments 3 and 4 combined........ **Scutellerini**

Tribe ELVISURINI Stål

Elvisuraria Stål, 1872, Öfv. K. Vet Akad., Förh. 29 (3): 32.

This tribe is represented in Micronesia by only one genus, *Coleotichus* White.

Genus **Coleotichus** White

Coleotichus White, 1839, Ann. Mag. Nat. Hist. I, 2: 541.

While there are numerous species of *Coleotichus* in the Pacific area and in Asia, only two appear to inhabit the Micronesian territory. Schouteden has divided the genus into three subgeneric divisions: *Coleotichus, Epicoleotichus,* and *Paracoleotichus*. The two Micronesian species belong respectively to the last two subgenera, and are easily separable as follows:

Size large, 16.0 mm. to 19.5 mm. long; predominately reddish fulvous with blue-green punctures; under surface of male genital segment with a very feeble transverse groove, apical margin rounded........ **6. Coleotichus (Epicoleotichus) marianensis**

Size smaller, 10.5 mm. to 11.5 mm. long; predominately yellowish fulvous, with blackish marks and punctures, which are frequently brown ferruginous; a rather variable species, with pale or flavescent forms occurring in the Caroline Islands; ventral surface of male genital segment divided by a deep transverse groove, anterior portion nearly perpendicular, posterior portion subhorizontal; apical margin of segment deeply excavated........ **7. Coleotichus (Paracoleotichus) breddini**

6. Coleotichus (Epicoleotichus) marianensis Usinger.

Coleotichus (*Epicoleotichus*) *marianensis* Usinger, 1946, B. P. Bishop Mus., Bull. **189**: 20.

DISTRIBUTION: S. Mariana Is. (Rota, Guam).

S. MARIANA IS. Rota: Four, June 1946, Townes; Sabana, two, no date, Townes. Guam: One, Apr. 1945, Baker; nine, Aug. 1945, Gressitt; one, 1924,

Hornbostel; Piti, nine, Aug. 1937, Oakley; one, June 1936, Usinger; one, Aug. 1936, Swezey; one, Sept. 1936, Swezey; two, Oct. 1936, Swezey.

This is, apparently, one of the several endemic species found in the S. Mariana Islands.

7. Coleotichus (Paracoleotichus) breddini Schouteden.

Coleotichus breddini Schouteden, 1905, Hist. Nat. Hungarici, Ann. **3**: 344.

DISTRIBUTION: Mariana Is., Caroline Is.

N. MARIANA IS. PAGAN: One, Apr. 1940, Yoshimura.

S. MARIANA IS. SAIPAN: One, Jan. 1945, Hagen; three, July 1945, Dybas; 20, June 1951, Bohart; one, July 1952, Kondo; As Mahetog, one, Jan. 1945, two, Jan. 1945, three, Apr. 1945, one, June 1945, one, Aug. 1945, all by Dybas; one, Sept. 1945, Ducoff; Garapan, one, Mar. 1938, Esaki; Mt. Tapotchau, two, Feb. 1949; Chalan Kanoa, four, Oct. 1947, Lange; Susupe, one, Jan. 1948; Assuguno, two, Sept. 1941, Matusita. TINIAN: One, June 1946, Oakley; two, Nov. 1952, Beardsley; Lasso, three, Jan. 1946, four, Feb. 1946, seven, Mar. 1946, all by Hadden. AGIGUAN: Six, May 1952, Kondo. ROTA: Two, June 1946, Townes; one, June 1946, Oakley. GUAM: One, Sept. 1936, Swezey; seven, July 1939, Oakley; two, Aug. 1939, Oakley; two, May 1956, Clagg; seven, Jan.-July 1945, Bohart and Gressitt.

PALAU. BABELTHUAP: One, Aug. 1939, Esaki; one, Apr. 1936, Ono; nine, May 1957, Sabrosky; eight, June 1957, Sabrosky; Ngiwal, one, July 1946, Townes; one, Dec. 1952, Gressitt; Ngaremeskang, eight, Dec. 1952, Gressitt; E. Ngatpang, 25, at light trap, Dec. 1952, Gressitt. KOROR: Seven, July 1946, Townes; 33, Nov. 1947-Feb. 1948, Dybas; two, July 1946, Oakley; three, July 1946, Townes; two, July 1951, Gressitt; one, Sept. 1951, Krauss; 10, Dec. 1952, Gressitt; one, Jan. 1938, Murakami; one, Aug. 1949, Mead; five, Apr. 1957, Sabrosky; one, Mar. 1945, Maehler; one, Mar. 1949; six, July 1952. URUKTHAPEL: One, Aug. 1944, Kondo. PELELIU: One, Aug. 1939, Esaki; two, Aug. 1945, Dybas. ANGAUR: One, Feb. 1936, Esaki.

YAP. YAP: One, Oct. 1952, Krauss; 26, July-Aug. 1950, Goss; one, Sept. 1939, Esaki; one, Mar. 1949; 18, June 1957, Sabrosky.

TRUK. WENA (Moen): 15, Mar.-Apr. 1949, Potts.

PONAPE. One, Aug. 1946, Townes.

This species has many attributes in common with *C. sordidus* Walker, with which it might be confused. *C. breddini* is somewhat smaller, has slightly more sinuate posterolateral pronotal margins and more acute apical angles along the connexival margin. The species is quite variable, some specimens from Yap becoming almost concolorous sordid yellow with colorless or concolorous punctures; other specimens, especially from the Mariana Islands, are much darker, with black or brown-ferruginous punctures and blackish markings on the scutellum and pronotum.

TRIBE SCUTELLERINI STÅL

Scutelleraria Stål, 1873, Enumeratio Hemipterorum **3**: 3, 8.

Of the large number of genera found in this tribe, at least two are present in Micronesia. A problematic third, in evidence by nymphs only, is also included in the following key.

KEY TO MICRONESIAN GENERA OF SCUTELLERINI

1. Antennae four-segmented, segment 2 several times longer than 1; dorsal surface finely and densely pubescent; color usually brownish red, testaceous, or fulvous, frequently with metallic-green blotching .... **Tetrarthria**
   Antennae five-segmented, segment 2 shorter than 1; upper surface glabrous; color usually totally metallic green, blue, or bronze 2
2. Entire costal margin of hemelytra essentially free (not covered by scutellum); tibiae sulcate .... **Calliphara**
   Only base of hemelytra exposed (major portion of costal margin covered by scutellum); upper surface of tibiae flat, if sulcate, then only near apex .... **Chrysocoris**

Genus **Tetrarthria** Dallas

Tetrarthria Dallas, 1851, List Hemip. Brit. Mus., 3, 20.

8. Tetrarthria variegata Dallas.

Tetrarthria variegata Dallas, 1851, List Hemip. Brit. Mus., 20, pl. 1, fig. 1.
Tetrarthria variegata, Stål, 1870, Öfv. K. Vet.-Akad. Förh. **27**: 616.
Tetrarthria variegata, Breddin, 1900, Stett. Ent. Zeitung **61**: 278.
Tetrarthria variegata, Distant, 1902, Fauna Brit. India, Rhynchota **1**: 49.
Tetrarthria quinquemaculata Dohrn, 1864, Stett. Ent. Zeitung **24**: 347.
Tetrarthria congrua Walker, 1868, Cat. Hemip. Heterop. Brit. Mus. 1: 20 (var. *b*).
Tetrarthria lateralis Walker, 1868, ibid. **1**: 21 (var. *c*).
Tetrarthria linetata Walker, 1868, ibid. **1**: 18 (var. *d*).
Tetrarthria maculata Walker, 1869, ibid. **1**: 22 (var. *e*).
Tetrarthria varia Walker, 1868, ibid. **1**: 18 (var. *f*).
Tetrarthria marginepunctata Vollenhoven, 1863, Faune ent. nindo-néerl., **1**: 13, pl. 1, fig. 6.

DISTRIBUTION: India, Burma, China, Sumatra, Celebes, Philippines, Caroline Is. (Palau).

PALAU. BABELTHUAP: 10, Dec. 1952, Gressitt; one, Mar. 1952, Gressitt. KOROR: One, May 1957, Sabrosky.

As the specific name implies, this is a very variable species and has been recognized as appearing in at least seven varietal forms. In addition to the typical *variegata,* two varieties, *maculata* Walker and *marginepunctata* Vollenhoven, are found among the 12 Palau specimens.

Genus **Calliphara** Germar

Calliphara Germar, 1839, Zeitschr. für Ent. **1**: 122.

Stål divided *Calliphara* into two subgenera, *Calliphara* sen. str. and *Chrysophara*. *C. munda* Stål, found in Micronesia, belongs to the *Chrysophara* complex.

9. Calliphara (Chrysophara) munda Stål.

Calliphara munda Stål, 1866, Berliner Ent. Zeitschr. **10**: 153.

DISTRIBUTION: China (?), Mariana Is., Caroline Is.

S. MARIANA IS. SAIPAN: As Mahetog, one, Jan. 1945, Dybas; Garapan, one, Mar. 1938, Esaki. TINIAN: Two, June 1946, Townes. AGIGUAN, 11, May-June 1952, Kondo; four, June 1952, Owen; three, May 1952, Peterson. ROTA: Seven, June 1946, Townes; two, Oct. 1945, Gressitt and Bohart; two, June 1946, Oakley; one, June 1951, Bohart. GUAM: Three, 1911, Fullaway; Piti, one, Aug. 1936, Swezey.

PALAU. NGERKABESANG: One, Apr. 24, 1957, Sabrosky. KOROR: One, Sept. 1939, Atohda. PELELIU: Two, Sept. 1946, Oakley; one, Sept. 1946, Townes.

YAP. YAP: One, Mar. 1954, Beardsley; one, July-Aug. 1950, Goss.

TRUK. One, 1937, Ikuta.

Calliphara munda is readily recognized as a moderately sized, elliptical scutellerid with a green or dark-blue metallic luster, sometimes with a pale golden tinge. There are seven black spots on the scutellum, six arranged bilaterally near the margins and one near the apex, and four black spots on the pronotum across the disc between the humeri; two additional pronotal spots occur at the cicatrices. This species is said to feed on *Guettarda, Exoecaria,* and *Glochidion*. It measures 10.0 mm. to 12.0 mm. long; 6.0 to 7.0 mm. wide across the humeri.

The specimens examined conform to Stål's original description with two exceptions. According to Stål, the rostrum reaches the base of the third abdominal segment and the scutellum is sometimes glossy golden (aureonitidus). In all of the Micronesian material, the rostrum barely exceeds the hind legs and the scutellum is either a deep metallic blue or a paler metallic green. The specimens from the Caroline and Palau Islands tend to be deep blue and somewhat larger in contrast with the smaller, bright-green examples from the Mariana Islands.

10. Chrysocoris sp.?

In the U. S. National Museum collection are three last-instar nymphs from the Marianas, Oct. 25, 1944, J. Webb, collector. They are included here to complete the record; the determination by R. I. Sailer is tentative. This genus also belongs to the subfamily Scutellerinae.

Subfamily ASOPINAE Spinola

Asopideae Spinola, 1850, Tavola Sinottica, 29, 30.
Asopidae Dallas, 1851, List Hemipt. Brit. Mus. **1**: 75.
Asopinae Distant, 1880, Biol. Centr. Am., Heteropt. **1**: 26.

This well-known subfamily is represented in Micronesia by six genera, one of which is new, and seven species. The insects are primarily predators, the habit being reflected in the general structure and stoutness of the rostrum. While the fauna in Micronesia is small in comparison with that the world over, it is the second largest representative of pentatomids in the area, being exceeded only by the subfamily Pentatominae. The accompanying key is designed for use with this limited fauna.

Key to Micronesian Asopinae

1. At least anterior femora provided with a distinct anteapical spine or tubercle..........2
   All femora unarmed, humeral spines entire..........4

2(1). Anterior femora with a pronounced acute anteapical spine; second abdominal segment with a well-developed, median, large, acute tubercle; humeral spines emarginate behind..........3
   Anterior femora with a reduced tubercle, other femora with anteapical nodules; second abdominal segment with an obsolescent minute tubercle; anterolateral pronotal margins prominently serrate; humeri entire......**Ponapea**

3(2). Anterolateral pronotal margins distinctly denticulocrenate; lateral margins of metasternum not elevated..........**Eocanthecona**
   Anterolateral pronotal margins smooth, entire, never crenulate; lateral margins of metasternum elevated..........**Platynopus**

4(1). Metasternum elevated into a small, spherical bulla (fig. 5); mesosternum with a low, moderately broad, flat-topped carina; abdominal spine reaching mesocoxae..........**Bulbostethus**
   Metasternum not elevated into a small, spherical bulla; mesosternum either shallowly sulcate or deeply sulcate with bilateral carinae..........5

5(4). Mesosternum longitudinally shallowly sulcate, without a median carina or two lateral carinae; metasternum small, metacoxae close together; abdominal spine reaching mesocoxae; humeral spines not retrorsely curved..........**Oechalia**
   Mesosternum and metasternum bilaterally carinate; metacoxae well separated; abdominal spine short, just touching posterior margin of metasternum; humeral spines gradually recurved..........**Parealda**

Genus **Ponapea** Ruckes, new genus

Size small, male about 7.5 mm. long; subdepressed above, moderately convex below; subpyriform in outline; anterior and posterior portions of body weakly declivous; coarsely and deeply punctured above and below.

Head slightly shorter than medial length of pronotum; juga and tylus subequal, apex of head truncately rounded; antenniferous tubercles visible from above; eyes prominent, subglobose and exceeding width of anterior pronotal margin; ocelli very small, well separated. Antennae filiform, long, segment 2 longer than 3. Rostrum long and slender for the

subfamily, segment 2 shorter than 3 and 4 combined, the latter two subequal, apex attaining middle of abdominal segment 3.

Pronotum less than twice as wide as long, almost trapeziform in outline, about seven-eighths of disc lying before a line drawn across humeri, posthumeral portion short; anterior margin shallowly excavated to receive head up to eyes, continuously arcuate, not truncate behind eyes; anterolateral margins straight and prominently coarsely serrate along anterior two-thirds; humeri somewhat produced and acutely angled but not spinose; posterolateral margins weakly impressed behind humeri; posterior angles obtusely rounded and inconspicuous. Scutellum long, triangular, frenum ending two-thirds the distance from base, apex narrowly rounded and extending past middle of abdomen. Coriaceous portion of hemelytra reaching abdominal segment 6, their lateral and apical margins mildly convex-arcuate, external apical angles obtusely rounded; membranes short and narrow, being only about one-fourth length of coriaceous portion, slightly exceeding tip of abdomen and not provided with a dusky vitta; veins few. Connexivum narrowly exposed, apical segmental angles somewhat produced, rounded, and thickish, subnodulate.

Mesosternum shallowly sulcate between two very low and thin lateral carinae; metasternum hexagonal, weakly concave; metacoxae wider apart from one another than either is from its mesocoxa. Abdominal segment 2 with a minute median tubercle which does not reach metasternum; a pair of small sericeous plagae on fourth and fifth abdominal plates in male. Anterior femora with a low anteapical tubercle, middle and hind femora with homologous swollen, nodular areas; tibiae sulcate above; basal tarsal segment stout and subequal to terminal two combined.

Type species: *Ponapea arachnoides,* new genus, new species (fig. 4).

This new genus holds a unique place among the Asopinae. It is quite unlike any other that has been described or figured, and apparently has no close affiliates. The generic name is derived from the island of Ponape.

11. Ponapea arachnoides Ruckes, n. sp. (fig. 4).

Over-all color reddish brown, glossy, very coarsely and deeply punctured, punctures slightly darker than background, almost castaneous; middle third of pronotum transversely, irregularly, and coarsely rugose.

Head almost twice as long medially as wide between eyes (80:42); lateral margins weakly sinuate just before eyes, then subparallel, but not reflexed, to a truncately rounded apex; juga and tylus subequal, the latter slightly prominent; disc uneven, coarsely and rather confusedly punctured, many punctures coalescing; eyes large, subglobose, and exceeding width of anterior pronotal margin by about one-third diameter of eye; ocelli small, almost invisible and four times as far apart as distant from eyes. Antennae reddish fulvous, darkening on segments 4 and 5; apex of segment 3 and all of 4 and 5 densely but finely setigerous; segmental ratios 13:60:50:60:50 (segments 2 and 4 equal and 3 and 5 equal).

Pronotum less than twice as wide across humeri as long medially (170:90); antehumeral sinus inconspicuous, anterolateral margins from there on straight with six or seven prominent, equally spaced, subconical denticles, a small one behind each eye; punctures coarse and deep, leaving a crude, irregular rugosity across middle third of disc just in front of humeri; feebly impressed between and in front of cicatrices, but no sharply defined collar present.

Scutellum one-third longer than wide (120:90), central basal subtriangular area slightly elevated and impressed on each side, then continued backward as a subcalloused median tapering low ridge; one or two concolorous pits at each basal angle; posterior half of disc gradually becoming feebly declivous, apex reaching base of fifth abdominal segment; punctures coarse and rather evenly spaced, except centrally. Hemelytra coarsely and evenly punctured, a single row of punctures on clavus, each disc becoming feebly declivous behind middle; lateral margins distinctly convex-arcuate behind feebly sinuate basal fourth, external angles obtusely rounded and reaching base of sixth tergite; apical margin convex-arcuate; membrane uniformly fulvous without a dusky vitta; two parallel, concolorous

veins present. Connexivum concolorous dark brown, only narrowly exposed, apical segmental angles as described for genus.

Under surface of head, prosternum, all thoracic pleura, and broad lateral portions of abdomen glossy, coarsely and densely punctured; inner abdominal portion of abdominal disc sparsely and more finely punctured, medial area essentially impunctate. Mesosternum and metasternum matte, fuscous to piceous. Metasternal ostiole prominent, its lateral canal hardly sulcate, subcalloused, evenly elevated, surface convex and glossy, subelliptical in outline, apex ending just beyond adjacent acetabula; evaporatorium very small and not exceeding apex of lateral canal. Legs long and slender, posterior femora nearly reaching apex of abdomen; femora only slightly stouter than tibiae; brownish fulvous, anterior femora and all tibiae darkening apically; tarsi paler, claws fulvous; anteapical tubercles on femora present but inconspicuous, those on anterior femora most evident, others obsolescent.

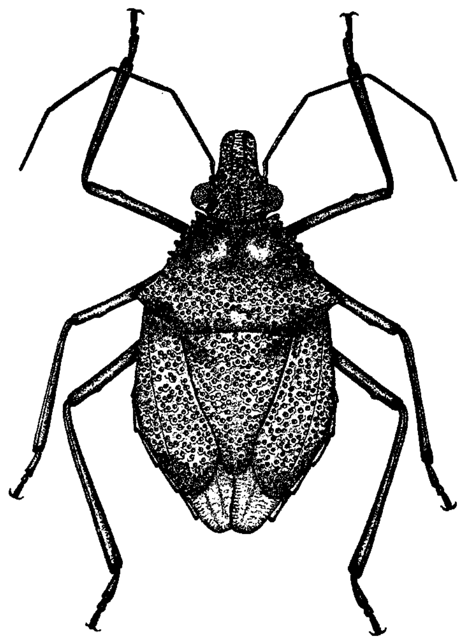


FIGURE 4.—*Ponapea arachnoides,* holotype.

Rostrum brownish fulvous, terminal segment infuscated; segment 1 only moderately stout, not quite reaching base of head; segmental ratios 40 : 67 : 43 : 40 (segment 2 shorter than 3 and 4 combined); apex of 4 reaching middle of third abdominal segment. Second abdominal segment provided with a minute, acute tubercle which does not reach metasternum, segment appearing almost unarmed.

Male genital segment subglobular, ventral disk finely and shallowly punctured, apical margin inflected, its edge essentially straight with a minute median notch; submarginal portion of segment deeply impressed; heads of parameres large, very thin, translucent, foliaceous, subelliptical, widely divergent, and protruding beyond lateral margins of capsule; proctiger longer than wide, prominently carinate medially and impressed on each side of carina. Holotype male, length 7.5 mm. long, 4.25 mm. wide across humeral angles; 4.1 mm. across greatest abdominal diameter.

Holotype, male (BISHOP 2740), Ponape, Caroline Is., Feb. 29, 1936, Ono.

DISTRIBUTION: Caroline Is. (Ponape).

The small, spiderlike appearance of this bug has suggested the specific name *arachnoides*. Since the genus occupies a unique position among the other known Asopinae, this new species stands by itself with no known close affiliates.

One second-nymphal instar of this species is in the collection of the United States National Museum. The color is much more rubescent than that in the adult and the serrated pronotal margins are broadly reflexed; the rostrum reaches the apex of the nymphal abdomen, and the legs, like those of the unique type, are long and spindly.

Genus **Eocanthecona** Bergroth

Eocanthecona Bergroth, 1915, Ann. Mag. Nat. Hist. VIII, **15**: 484. Bergroth separates *Cantheconidea* Schouteden into two genera, *Cantheconidea* sen. str. and *Eocanthecona* for Schouteden's groups A and B.

12. **Eocanthecona furcellata** (Wolff).

Cimex furcellata Wolff, 1801, Icones Cimicum Descr. Illus. **5**: 176.

Canthecona furcellata, Stål, 1870, Öfv. K. Vet.-Akad., Förh. **27**(7): 619.

Cantheconidea furcellata, Schouteden, 1907, Genera Insectorum **52**: 45.

Easily identified by strongly spinose fore femora, concolorous tip to scutellum, posteriorly emarginate humeral spines, and crenulate anterolateral pronotal margins. It measures 10.5 mm. to 12.0 mm. long and 7.0 mm. to 8.0 mm. across humeral spines.

DISTRIBUTION: Philippines, Caroline Is. (Palau).

PALAU. Koror: One, Aug. 1949, Mead; one, June 1952, Beardsley; one, Sept. 1953, Beardsley; one, Jan. 1954, Beardsley.

Genus **Platynopus** Amyot and Serville

Platynopus Amyot and Serville, 1843, Hist. Hemipt., 79.

13. **Platynopus melacanthus** (Boisduval).

Pentatoma melacanthus Boisduval, 1835, Voy. Astrolabe, Ent. **2**: 628, pl. 11, fig. 7.

Platynopus melacanthus, Stål, 1870, Enumeratio Hemipterorum **1**: 40.

Readily recognized by its sharp, emarginate, black humeral spines, yellow apex to scutellum, strongly spinose fore femora, and perfectly smooth, glossy, yellow, calloused anterolateral pronotal margins. It measures 9.0 mm. to 10.0 mm. long; 5.0 mm. to 6.0 mm. wide across humeri.

DISTRIBUTION: New Guinea, New Caledonia and adjacent islands, Caroline Is., Marshall Is., Gilbert Is., Polynesia.

PALAU: KOROR: One, Mar. 1948, Maehler; four, Aug. 1952, Beardsley; one, Oct. 1952, Beardsley; two, Nov. 1947, Dybas; three, Sept. 1952, Krauss. PELELIU: One, Feb. 1938, Esaki; one, Aug. 1945, Dorsey; one, Aug. 1945, Dybas. ANGAUR: One, Feb. 1948, Dybas.

PONAPE. One, Sept. 1950, Adams; two, Feb. 1936, Ono; one, July 1939, Esaki.

KUSAIE. One, Apr. 1953, Clark; four, Aug. 1946, Oakley.

MARSHALL IS. ENIWETOK: One, Dec. 1950, Oshiro. KWAJALEIN: One, Mar. 1944, Wallace; one, Aug. 1944, Bryant; two, Aug. 1944, Wallace.

GILBERT IS. TARAWA: Three, Nov. 1957, Krauss.

In its distribution, this species has apparently been restricted to the more southern zone of Micronesia, not appearing in the Mariana Islands or the Bonin-Volcano group.

Genus **Bulbostethus** Ruckes

Bulbostethus Ruckes, 1960, Hawaiian Ent. Soc., Proc. **17** (2): 287.

The salient generic characteristics given in the above paper are: the aspinose front femora, a low mesosternal carina that gradually dilates at each end, a metasternum elevated into a small subspherical bulla, the crest of which is higher than the level of the mesosternal carina (fig. 5), sericeous plagae on the fourth and fifth abdominal sternites in the male, a stout abdominal spine reaching the mesocoxae, and sulcate tibiae.

14. **Bulbostethus chrysopterus** (Herrich-Schaeffer).

Asopus chrysopterus Herrich-Schaeffer, 1844, Wanzen. Ins. **7**: 114-15, fig. 781.

Canthecona chrysoptera, Lethierry and Severin, 1893, Cat. Hemip. **1**: 213.

Cantheconidea chrysoptera, Schouteden, 1907, Genera Insectorum **52**: 44.

Parealda chrysoptera, Usinger, 1946, B. P. Bishop Mus., Bull. **189**: 23.

Bulbostethus chrysopterus, Ruckes, 1960, Hawaiian Ent. Soc., Proc. **17** (2): 287.

DISTRIBUTION: Mariana Is.

S. MARIANA IS. ROTA: One, June 1946, Townes. GUAM: One, June 1946, Townes; one, Nov. 1952, Gressitt; Mt. Alifan, female, Apr. 1946, Krauss. (Two retained by AM.)

15. **Bulbostethus transversalis** Ruckes, n. sp. (fig. 5).

Semiglossy, ground color above and below fulvous to light fulvous; punctures contrastingly darker brown; corium partially to totally rubescent.

Head slightly more than two-thirds medial length of pronotum (65:90); punctures fine, somewhat irregular on juga but arranged in more or less longitudinal rows on central portion and vertex; eyes dull red, subglobular, barely exceeding apical pronotal angles; ocelli bright red and four times as far apart as distant from eyes. Antennae fulvous, dark-

ening slightly apically; segmental ratios 10 : 40 : 37 : 43 : 43 (terminal four segments essentially subequal, 3 shortest.)

Pronotum slightly less than 2.5 times as wide across humeral angles as long medially (220 : 90), moderately convex, punctures dense, not overly coarse, regularly spaced especially on posterior half; anterior margin shallowly sinuate centrally, obliquely truncate behind eyes; anterolateral margins calloused and irregularly crenulate and paler than adjacent areas; humeri directed transversely, their angles acutely rounded, becoming reddish fulvous, apices darker, somewhat shorter than in *chrysopterus*. Scutellum about as long as wide (122 : 120), rather evenly punctured, apical and subapical margins narrowly impunctate and pale; a single dark brown deep pit or fovea at each basal angle. Hemelytra very evenly punctured, embolium and clavus fulvous, corium either uniformly dull red or fulvous blotched with red; membrane transparent, pale tan, tips slightly darker but with

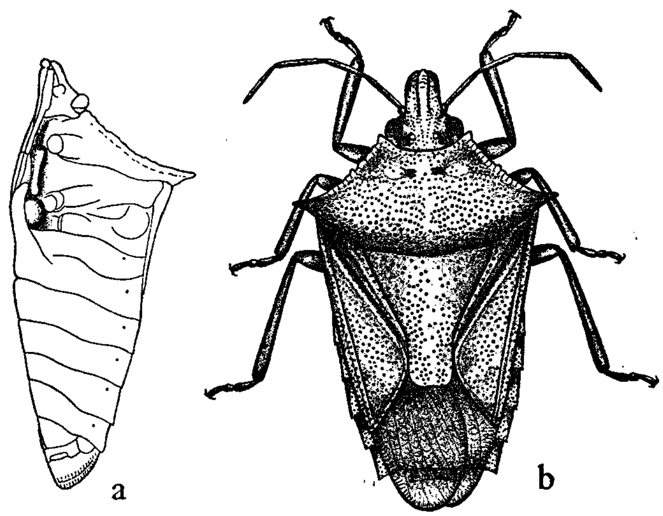


FIGURE 5.—*Bulbostethus transversalis*: **a**, side view of venter showing sternal features; **b**, holotype.

no longitudinal dusky vitta; about 10 veins, concolorous, subparallel. Connexivum narrowly exposed, more or less concolorous fulvous, apical segmental angles acute and weakly produced.

Ventral surface of head and thoracic pleura sordid ivory to light fulvous; head impunctate below; punctures on pleura moderately coarse, concentrated on acetabula and along segmental margins; mesosternum, metasternum, and abdominal spine as described for genus; rostrum slightly exceeding metacoxae; canal of metasternal ostiole shallow, apex curved forward slightly and reaching middle of supporting plate. Abdomen fulvous, broad lateral portions densely but shallowly punctured, punctures obsolescent posteriorly; central portion of disc well elevated and impunctate; sericeous plagae on sternites 4 and 5 of male small but evident, their pile short and concolorous.

Male genital segment subovoidal, finely punctured below, somewhat depressed above; apical margin truncate centrally, then abruptly sinuate laterally to external corners which are short and obtusely rounded; a shallow impression below central truncate margin; heads of parameres totally visible, large, thin, subtriangular, and widely divergent laterally

above margins of segment so that their very acute apices reach well beyond limits of capsule; proctiger longer than wide, a transverse sclerotized ridge near base. Basal plates of female genital valves subquadrangular, about as long as wide, apical margins taken together, truncate with no notch, sinus or other hiatus between them; central plate transversely oblong, apical plates subparallel and widely separated from one another.

Holotype, male, 8.8 mm. long to tip of membrane, 5.25 mm. wide across humeral angles; allotype, female, 9.5 mm. long to tip of membrane, 6.0 mm. wide across humeral angles.

Holotype, male (CM), Tinian, Mariana Is., Mar. 31, 1945, Dybas. Allotype, female (CM), same data as holotype. Paratypes, N. Mariana Is.: Female (US), Agrihan, July 17, 1949, Mead; male (KU), Pagan, Apr. 24, 1940, Yasumatsu and Yoshimura. S. Mariana Is.: Three males (AM, US), Saipan, Jan. 15, 1949, Maehler; male (BISHOP), May 8, 1940, Yasumatsu and Yoshimura; female (BISHOP), Saipan, Jan. 1, 1949, Maehler; two (CM), Saipan, Jan. 23, 1945, Dybas; female (AM), Tinian, Apr. 4, 1945, Dybas; two, Tinian, Apr. 10, 1945, Dybas; male (CM), Mt. Lasso, Tinian, Apr. 4, 1945, Dybas.

DISTRIBUTION: Mariana Is.

This species is very closely allied to *B. chrysopterus* (Herrich-Schaeffer) but differs in that the humeri are much less produced and are directed transversely rather than extended obliquely forward. The color is also somewhat darker with more reddish tones. The apex of the scutellum is pale in *transversalis* but not so in *chrysopterus*.

Genus **Oechalia** Stål

Oechalia Stål, 1862, Stett. Ent. Zeitung **23**: 93.

16. **Oechalia schellenbergii** (Guerin Méneville).

Pentatoma Schellenbergii Guerin Méneville, 1831, Voy. Coquille, Atlas, Ins., pl. 11, fig. 9.

Pentatoma consocialis Boisduval, 1835, Voy. Astrolabe, Ent. **2**: 630.

Pentatoma Schellembergii Guerin Méneville, 1838, Voy. Coquille, Text, Zool. **2**: 166.

Oechalia consocialis, Stål, 1870, Enumeratio Hemipterorum **1**: 59.

Oechalia schellembergii, Musgrave, 1932, Roy. Soc. New South Wales, 134.

One of the smaller asopine pentatomids in Micronesia. Readily recognized by short, acute, triangular humeri, pale, acute apex of scutellum, four, more or less distinct, longitudinal lines of black punctures on head, six or seven brown veins on clear hemelytral membranes, sulcate mesosternum, very small, impressed metasternum, proximity of hind coxae, and relatively long abdominal spine that reaches mesocoxae. Measurements: 7.0 mm. to 8.0 mm. long; 4.0 to 5.0 mm. wide across the humeri.

DISTRIBUTION: Tasmania, Australia, New Zealand, Wake, Marshall Is., Gilbert Is., Polynesia (except Hawaii).

WAKE. Nine, Nov. 1953, Joyce; one, Aug. 1950, Adams; one, Dec. 1956, Oshiro; one, Sept. 1957, Krauss.

MARSHALL IS. ENIWETOK: Five, May 1946, Townes; one, Dec. 1950, Oshiro; two, Aug. 1945, Allen. BIKINI: One, Aug. 1946, Morrison. WOTHO: One, Oct. 1953. KWAJALEIN: Six, June 1945, Wallace; one, Aug. 1946, Townes; two, Oct. 1953. MAJURO: Four, Aug. 1946, Townes; four, June 1950; two, Apr. 1950, La Rivers.

GILBERT IS. BUIARTUN: One, July 1951, Moul; one, unlabeled. TARAWA: One, Mar. 1951, Catala.

For the past 50 years or more this species has been identified under the specific name of *Oechalia consocialis* (Boisduval). Woodward [1956, Roy. Soc. New Zealand, Trans. **84** (2): 429] has suggested the need of re-establishing the name *schellembergii* for the species, based on the rules of priority, since the identifiable figure of this insect appeared in Guerin Méneville's Atlas in 1831, four years prior to the publication of Boisduval's work. The specific name given to the figure in the Atlas, however, is *Schellenbergii*. Hence, if one is to interpret the rules of priority to their ultimate ends, this species must be *Oechalia schellenbergii*, rather than *schellembergii* which did not appear in print until Guerin Méneville's "Text" was published in 1838.

Genus **Parealda** Schouteden

Parealda Schouteden, 1907, Soc. Ent. Belg., Ann. **51**: 47.

17. Parealda bouvieri Schouteden.

Parealda Bouvieri Schouteden, 1907, Soc. Ent. Belg., Ann. **51**: 47.
Parealda chrysoptera, Usinger, 1946, B. P. Bishop Mus., Bull. **189**: 23.
Parealda bouvieri, Ruckes, 1960, Hawaiian Ent. Soc., Proc. **17** (2): 286.

An easily recognized species with recurved humeral spines and bilaterally carinate mesosternum and metasternum. Measurements: 9.5 mm. to 10.0 mm. long; 7.25 mm. to 7.5 mm. wide across the humeri.

DISTRIBUTION: Mariana Is.

S. MARIANA IS. SAIPAN: One, Aug. 1940, Yasumatsu and Yoshimura; one, Jan. 1945, Dybas; one, Feb. 1945, Dybas; one, Mar. 1948, Lange; two, Jan. 1945, Dybas. TINIAN: Three, Mar. 1945, Dybas. AGIGUAN: One, June 1952, Kondo. ROTA: One, June 1946, Townes; one, June 1946, Hosaka; one, Oct. 1945, Bohart and Gressitt. GUAM: One, July 1946, Townes; one, June 1945, Bohart and Gressitt; one, Feb. 1948, Maehler; one, Oct. 1949, Kondo; one, July 1936, Swezey; one, Feb. 20, 1948; one, Feb. 1954, Liming; one, Oct. 1957, Krauss.

This is the species which I believe was incorrectly identified by Usinger as *Parealda chrysoptera* (Herrich-Schaeffer). All specimens at hand have

been very carefully examined and each compares very favorably with both the original description and Schouteden's colored figure of the species depicted in the Genera Insectorum **52**, pl. 5, fig. 3, and is very different from Herrich-Schaeffer's description (Text **4**: 114) and his figure (Atlas, 781).

Subfamily PENTATOMINAE Stål

Pentatomida Stål, 1864, Hemipt. Africana **1**: 76.
Pentatomina Stål, 1872, Öfv. K. Vet.-Akad. Förh. **29** (3): 33.
Pentatominae Distant, 1880, Biol. Centr. Am., Heteropt. **1**: 49.

This is the largest of the pentatomid subfamilies occurring in Micronesia; it is represented by 11 genera and 15 species, including one new genus and seven new species.

The key submitted below is, as others before it, fitted to the restricted Micronesian fauna and not particularly adaptable for use in other areas.

Key to Genera of Pentatominae

1. Second abdominal segment provided with a forward projecting spine or tubercle, or obtusely convex; species moderate to large in size.......2
   Second abdominal segment impressed medially, not obtusely convex, devoid of a spine or tubercle; mesosternum not carinate; lateral margins of head strongly trenchant; frenum not passing middle of scutellum; tibiae feebly planosulcate; small, fulvous species.......**Eysarcoris**

2(1). Mesosternum carinate; ostiolar canal continued laterally as an evanescent canal or abruptly ending some distance from ostiole; anterolateral pronotal margins entire, sometimes reflexed.......3
   Mesosternum not carinate, subsulcate; metasternal ostiole provided with a short, elevated, digitiform auricle; anterolateral pronotal margins obsolescently crenulate; second abdominal segment with a short tubercle.......**Parvacrena**

3(2). Second abdominal segment provided with a spine that passes hind coxae.......4
   Second abdominal segment with an acute, or blunt tubercle, not passing hind coxae, or merely obtusely convex.......5

4(3). Abdominal spine distinctly compressed apically, not reaching mesocoxae; abdominal venter distinctly punctured laterally.......**Piezodorus**
   Abdominal spine tapering-terete apically, surpassing mesocoxae; abdominal venter impunctate.......**Catacanthus**

5(3). Mesosternal carina very high and extended forward between procoxae as a high, stout lamella; tibiae terete.......6
   Mesosternal carina low to moderate in height, but not extended forward between procoxae as a high, stout lamella; tibiae either terete or shallowly sulcate.......7

6(5). Apical and anteapical margins of scutellum narrowly impressed; posterior pronotal margin concave; semiglossy, pronotum and scutellum densely punctured; humeri extended laterally into recurved, acute cornuae.......**Vitellus**

Apical and anteapical margins of scutellum coplanar, not impressed; posterior pronotal margin essentially straight; humeri rectilinear, not extended laterally into acute cornuae; glossy, pronotum and scutellum sparingly punctured, almost impunctate .... **Pegala**

7(5). Second abdominal segment with a median acute tubercle that touches hind margin of metasternum (in *Glaucias lucidus* spine is obsolescent); above glossy or semiglossy .... **Glaucias**

Second abdominal segment medially obtusely convex or with a blunt tubercle......8

8(7). Second abdominal segment with a blunt tubercle; abdominal venter subtectiform in contour; dorsal surface matte, finely and densely punctured, finely rugulose; margins of ostiolar canal subparallel, apex ending abruptly near middle of metapleuron; bright-green species .... **Nezara**

Second abdominal segment merely obtusely convex, hardly tuberculate; dorsal surface glossy or semiglossy, not finely rugulose; margins of ostiolar canal tapering laterally, apex evanescent beyond middle of metapleuron; varied-colored species 9

9(8). Hind tibiae shallowly sulcate 10

Hind tibiae terete; anterolateral pronotal margins straight, acute and subreflexed .... **Alciphron**

10(9). Anterolateral pronotal margins shallowly sinuate, subcalloused and feebly elevated, humeri acutely angled, subprominent; fulvous or brown species .... **Antestia**

Anterolateral pronotal margins straight, neither calloused or elevated; humeri rectilinear to obtuse, not produced; green or blue-green species.......... **Plautia**

Genus **Eysarcoris** Hahn

Eysarcoris Hahn, 1834, Wanzen. Ins. **2**:66, pl. 51, figs. B-E.

18. **Eysarcoris insularis** Dallas.

Eysarcoris insularis Dallas, 1851, List. Hemipt. Brit. Mus. **1**:228.

DISTRIBUTION: Bismark Archipelago (?), Bonin Is., Caroline Is.

BONIN IS. MUKO JIMA: Two, July 1951, Bohart. ANI JIMA: One, July 1949, Mead. CHICHI JIMA: Four plus one nymph, June 1949, Mead; 15, May-June 1958, Snyder and Mitchell.

PALAU: BABELTHUAP: One, Aug. 1939, Esaki; one, May 1957, Sabrosky. KOROR: One, Mar. 1948, Maehler; one, June 1954, Beardsley; one, July 1956, McDaniel; one, July 1946, Oakley. PELELIU: One, May 1957, Sabrosky. ANGAUR: One plus one nymph, Apr. 1936, Kondo.

YAP: YAP: Two, Aug. 1952, Krauss.

This small, readily identifiable pentatomid is apparently restricted to Caroline and Bonin Islands. Although Dallas described the species from the "Sandwich Islands," it is not found in Hawaii, and the name Sandwich may have been confused with an island of the same name in the Bismarck Archipelago. This species possibly moved northward from that region to the Palau and Bonin Islands, bypassing the Mariana Islands en route.

The color is fulvous, with the head and a large pair of anterior pronotal patches black. The vertex of the head frequently has a short median fulvous stripe. The puncturation is fuscous, quite uniform and dense. An ochraceous callus is present at each basal scutellar angle. It measures about 5 mm. in length.

Genus **Parvacrena** Ruckes, new genus

Narrowly obovate; mildly convex above, strongly so beneath; densely and rather uniformly punctured dorsally and on the under sides of head and thoracic pleura, more sparingly and finely so on abdomen; head and anterior two-thirds of pronotum mildly declivous.

Head flattish, more than four-fifths medial length of pronotum; margins sinuate just before eyes up to about middle and from there onward, straight, abruptly and obtusely bent inward and converging to a subacute apex; juga slightly longer than tylus, parallel apically, leaving a small rectilinear emargination there; ocelli slightly less than twice as far apart as distant from eyes; antennal tubercles prominent and visible in part from above; antennae rather slender, slightly less than half body length; segment 1 stoutish and reaching only half way to apex of head, segment 2 slightly shorter than segment 3, segment 4 weakly clavate apically and there feebly depressed from dorsal side, segment 5 fusiform; bucculae prominently elevated, uniform in height throughout, reaching base of head, angulated anteriorly and terminating posteriorly in a distinct, rounded lobe; rostrum reaching hind coxae, segment 1 shorter than bucculae and completely hidden by them (when viewed laterally), segment 2 slightly longer than segment 3.

Pronotum slightly more than twice as wide across humeri as long, medial disc mildly convex and quite even; anterior margin about as wide as head through eyes, neither elevated nor calloused, shallowly, subtruncately excavated centrally to receive broad base of head, then transverse behind eyes; anterolateral margins acute, essentially straight, obsolescently crenulate along anterior half of each margin and terminating in an obscure, small, obtuse, triangular, transverse tooth behind each eye; humeri barely prominent, not produced, obtusely angled; posterior margin essentially straight. Scutellum longer than wide, reaching past middle of abdomen, frena ending two-thirds distance from base, postfrenal margins feebly converging to a narrowly rounded, but not acute, apex. Apical margin of corium essentially straight, external apical angle acutely rounded, membrane slightly surpassing end of abdomen, veins raised and subparallel. Connexivum very narrowly exposed, apical segmental angles rectilinear and minutely produced.

Mesosternum somewhat tumid and medially shallowly sulcate. Metasternum narrowly hexagonal, subimpressed, its posterior margin narrow and not excavated. Mesocoxae and metacoxae mutually equidistant. Metasternal ostiole provided with a very short auricle which is only slightly longer than diameter of ostiole; evaporatorium large, triangular, and sparingly punctured. Abdominal segment 2 provided with a short, slightly compressed, conical tubercle which just about reaches metasternum. Abdominal disc evenly convex, neither keeled nor furrowed medially. Legs medium in size, tibiae distinctly sulcate. (See figure 6, *a*.)

Type species: *Parvacrena punctata* Ruckes, n. sp.

This new genus is unique in that it has the general facies of Stål's Philippine genus *Ochrophora* but possesses detailed characters that belie such relationship. The presence of a median, subconical tubercle on the second abdominal segment in *Parvacrena* immediately segregates it from the *Brachymna-Ochrophora* complex of genera and places it nearer to *Prionaca* Dallas and its allies; but the short, inconspicuous humeri differentiate it

from any of these. In addition to the abdominal tubercle, the sulcate mesosternum, the auriculate metasternal ostiole, the obsolescently crenulate pronotal margins, the peculiar form of the head with its incised apex, the weakly clavate fourth antennal segment with its dorsally depressed surface are the distinctive and differential generic characters.

19. Parvacrena punctata Ruckes, n. sp. (fig. 6, *a*).

Light yellowish fulvous or ochraceous, with uniform and dense ferruginous punctures. Head not quite one-fourth longer than wide between eyes (80 : 65) ; lateral margins as described for the genus; surface very feebly undulant, punctures ferruginous to red; juga acutely rounded apically; ocelli moderate in size and separated from eyes by an impunctate

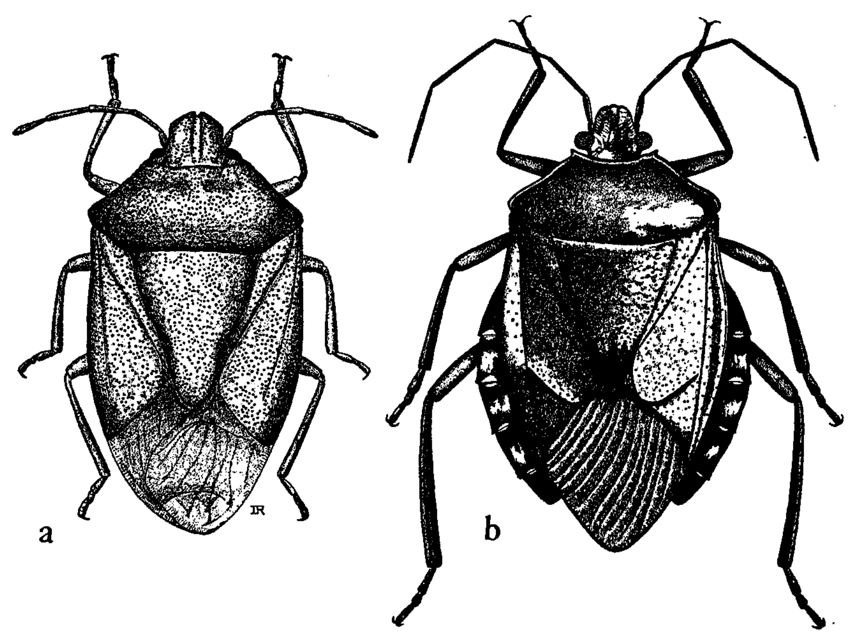


FIGURE 6.—**a,** *Parvacrena punctata,* holotype; **b,** *Catacanthus fuchsinus,* holotype.

area. Antennae pale fulvous, segments 2 and 3 filiform, segment 4 as described for the genus, segment 5 fusiform; apical half of segment 4 and all of 5 finely and densely setulose; segmental ratios 25 : 35 : 43 : 50 : 43 (segment 2 slightly shorter than 3; 4 the longest).

Pronotum hexagonal, a little more than twice as wide across humeri as long medially (220 : 100), disc vaguely rugose centrally, shallowly and broadly impressed behind front margin; cicatrices with 12 or more centrally placed punctures; anterolateral margins essentially straight, obsolescently finely crenulate along anterior half. Scutellum about one-fifth longer than wide at base (155 : 130), uniformly punctured except for extreme apical impunctate margin; basal angles inconspicuously, very minutely calloused; a very small fuscous pit obliquely forward of calloused spot; a short, very narrow, fuscous dash on each anteapical margin about half way between end of frenum and extreme apex. Hemelytra uniformly punctured, and with a small elliptical discal spot; membrane very pale fuligi-

nous, with six or seven subparallel and bifurcated fulvous veins, inner basal area not infuscated. Connexivum narrowly exposed, uniformly punctured, both basal and apical angles of segments minutely fuscous, apical angles rectilinear and weakly produced.

Under surface flavescent to light fulvous, punctures pale ferruginous, becoming paler and finer on lateral portions of abdomen; central portion of abdominal disc essentially impunctate, a transverse row of six to eight brownish to ferruginous small spots paralleling posterior margins of segments 3 and 4; a small fuscous to piceous marginal spot at each incisure. Spiracles brownish. Rostrum sordid yellow to yellow fulvous, apex reaching hind coxae and fuscous, segment 3 slightly swollen apically; segmental ratios 40 : 50 : 40 : 30 (segment 2 slightly longer than segment 3, the latter slightly longer than segment 4). Legs fulvous, finely stippled with light brown to ferruginous fine spots. Other characters as stipulated for the genus.

Male genital segment ovoidal, apical orifice trapezoidal in outline, contents visible. Apical margin narrowly and deeply V-shaped centrally, then sigmoid to lateral apical angles, margin somewhat inflected and subtended by a moderately deep impression; lateral apical lobes double, a narrow but prominent notch between upper and lower portions, the latter somewhat retrorsely produced and provided with a conspicuous tuft of setae; parameres much recessed, digitiform, vertical in position and parallel to one another, their apices rounded, not reaching superior margin of capsule; proctiger ovoidal, deeply impressed centrally. Holotype male, 10.0 mm. long; 5.5 mm. wide across humeri.

Holotype, male (US 66413), Koror, Palau Is., at light, Sept. 21, 1952, Beardsley. Paratypes: three males, Aug. 11-12, 1952 (BISHOP, US), Aug. 24, 1952 (AM), Beardsley; male (KU), Yap, light trap, Dec. 3, 1952, Gressitt.

DISTRIBUTION: Caroline Is. (Palau, Yap).

Genus **Piezodorus** Fieber

Piezodorus Fieber, 1861, European Hemipt., 78, 329.

20. Piezodorus hybneri (Gmelin).

Cimex rubrofasciatus Fabricius, 1787, Mant. Ins. **2**: 293.
Cimex hybneri Gmelin, 1789, Syst. Nat., ed. 13, 2151.
Cimex flavescens Fabricius, 1798, Ent. Syst., suppl. 534.
Rhaphigaster flavolineatus Westwood, 1837, Hope Cat., 31.
Rhaphigaster virescens Amyot and Serville, 1843, Hist. Nat. Ins., Hemipt., 148.
Nezara pellucida Ellenrieder, 1862, Nat. Tijd. Ned. Ind. **24**: 157, fig. 26.
Rhaphigaster oceanus Montrouzier, 1864, Soc. Linn., Lyon, Ann. II, **11**: 224.
Rhaphigaster extenuatus Walker, 1867, Cat. Heteropt. **3**: 371.
Piezodorus rubrofasciatus Stål, 1868, K. Sven. Vet.-Akad., Handl. **7** (11): 32.
Piezodorus rubrofasciatus, Distant, 1902, Fauna of India, Rhynch. **1**: 224, fig. 142.
Piezodorus rubrofasciatus, Kirkaldy, 1908, Linn. Soc. New South Wales, Proc. **33**: 348.
Piezodorus hybneri, Kirkaldy, 1909, Cat. Hemipt. **1**: 136.

Semiglossy, color somewhat olivaceous fulvous, punctures fuscous, small and rather uniformly distributed. A transverse band of ochraceous or red extends across pronotum between humeri. Each clavus with a minute black spot opposite the point where frenum ends. Measurements: 9.0 to 10.0 mm. long; 4.5 mm. to 5.0 mm. wide across humeri.

DISTRIBUTION: East Africa, India, Ceylon, Burma, Sumatra, Java, Japan, Philippines, Mariana Is., Palau Is., Australia, New Caledonia, Fiji, Tahiti.

S. MARIANA IS. SAIPAN: One, Feb. 1958, Krauss. GUAM: One, no date, Liming; two, Oct. 1957, Krauss; one, Feb. 1958, Krauss; 13, Oct. 1952, Krauss; one, Nov. 1952, Gressitt.

PALAU: BABELTHUAP: One, May 1957, Sabrosky.

As Fabricius' name *Cimex rubrofasciatus* for this bug is preoccupied, the next available specific name is *Cimex hybneri* Gmelin. Although this is a widely distributed species it is apparently rather uncommon in Micronesia, and there restricted to the more western areas.

Genus **Catacanthus** Spinola

Catacanthus Spinola, 1837, Essai Hemipt., 352.

Among the species of this typically Asiatic and insular genus are found some of the largest, handsomest, and most colorful Hemiptera of the western Pacific region.

One very badly damaged specimen of a probable new species has been recorded and described by Usinger from Mt. Alifan, Guam, but no specific name has been given due to the fragmentary nature of the specimen. I am in agreement with Usinger in withholding a name until such time as a more complete example comes to hand. A specimen from Yap of another new species, this one in almost perfect condition, is described below.

21. **Catacanthus fuchsinus** Ruckes, n. sp. (fig. 6, *b*).

Small in size for the genus, male about 17 mm. long. Lustrous metallic above and very glossy below.

Head, pronotum, and most of scutellum dark green with bluish reflections; hemelytra more greenish. Connexivum widely exposed and bright red with lavender reflections producing a magenta (fuchsine) effect.

Juga just before eyes strongly oblique rugose, then obsolescently so apically; vertex and base of tylus feebly transverse rugose. Antennae dark purplish black, segments 3, 4, and 5 densely short pilose; segments 2 and 3, and 4 and 5 respectively, subequal; segmental ratios 32:80:80:120:120. Eyes fuscous, ocelli bright red.

Pronotum not quite three times as wide across humeri as long medially (340:120), very sparingly and feebly punctured; some very fine transverse striae on fore part of disc, lateral submarginal area just inside reflexed margin vertically coarsely rugose, particularly anteriorly; cicatrices dark bronzy; posterolateral margins dull rubescent. Scutellum moderately but finely punctured, punctures densest near lateral margins and on middle third of disc; major portion dark green with bluish reflections; apical portion rubescent, apex acute and impunctate; disc provided with a moderately broad longitudinal rubescent band extending from middle to apex. Hemelytra, for the most part, dark greenish, inner and

outer claval margins dull red, basal fifth of corium ochraceous, then blending apically with adjacent green; costal margin of embolium sanguineous basally, becoming dull fulvous distally; membrane concolorous dark brown. Connexivum well exposed, concolorous sanguineous with lavender reflections producing a magenta effect; apical segmental angles minutely piceous, rectilinear and slightly produced.

Under surface of head, thoracic sterna, coxae, bases of trochanters and a broad area on each side of abdominal disc, ochraceous; a small elongate brown spot on each side of head near bucculae; thoracic pleura, abdominal spine, broad central abdominal area, entire sixth sternite, and a broad submarginal band on each side, sanguineous; abdominal segments 2-5 provided with a large fuscous to piceous patch adjacent to each spiracle. Legs piceous, except as noted above; anterior tibiae mildly clavate apically rather than distinctly dilated. Basal rostral segment sordid ochraceous, segments 2-4 piceous, apex reaching metacoxae.

Apical margin of male genital segment bisinuate; submarginally moderately impressed; inner faces of lateral apical lobes subelliptical, weakly concave and each provided with an entrorse brush of long, golden hairs; heads of parameres fulvous, terete, vertically parallel, their apices acute, fuscous, and curved antrorsely, not reaching superior margin of segment; a pair of small piceous denticles on each side of inner wall of capsule adjacent to apices of parameres. Holotype, male, 17.0 mm. long to apex of abdomen; 8.5 mm. wide across humeral angles.

Holotype, male (KU), Nif, Yap, Caroline Is., Sept. 8, 1939, Esaki.

DISTRIBUTION: Caroline Is. (Yap).

The pattern of the male genital segment somewhat resembles that of *C. carrenoi* Le Guillou, to which, assumedly, this new species is related. The difference in color pattern, over-all smaller size, the more produced abdominal angles, the totally concolorous hemelytral membranes, and the subclavate anterior tibiae readily distinguish this new species from any other.

Genus **Vitellus** Stål

Vitellus Stål, 1865, Soc. Ent. France, Ann. IV, **5**: 170.

The impressed narrow margins of the apical and antapical portion of the scutellum combined with the somewhat retrorsely curved humeral cornuae readily distinguish this pentatomid from others found in Micronesia.

22. **Vitellus mucronatus** Stål.

Vitellus mucronatus Stål, 1865, Soc. Ent. France, Ann. IV, **5**: 171.

DISTRIBUTION: Northern Australia, Caroline Is. (Palau).

PALAU. Koror: Male, Aug. 1952, Beardsley.

In addition to being somewhat smaller, this specimen differs in two minor respects from Stål's description; the rostrum does not reach the base of the fourth abdominal sternite and the apices of the humeral cornuae are piceous instead of being concolorous flavescent. Over all, the species is concolorous dilute ochraceous. The head and anterior portion of the pronotum are strongly declivous. It measures 7.5 mm. long; 6.0 mm. wide across the humeral cornuae.

Genus **Pegala** Stål

Pegala Stål, 1867, Öfv. K. Vet.-Akad. Förh. **24** (7) : 522.

23. **Pegala laevis** Bergroth.

Pegala laevis Bergroth, 1894, Rev. Ent. **13** : 152.

Very glossy, pale fulvous, sometimes with pale olivaceous shading; hemelytra provided with pairs of darker brown patches and tergum dark metallic blue and finely punctured. Measurements: 10.0 to 11.0 mm. long; 5.5 to 6.5 mm. wide across humeri.

DISTRIBUTION: New Caledonia, S. Mariana Is.

S. MARIANA IS. SAIPAN: One, May 1940, Yasumatsu and Yoshimura; three, Jan. 1949, Maehler; two, Aug. 1951, Bohart; Halaihai, one, Feb. 1945, Dybas; Mt. Tapotchau, four, Jan. 1945, Dybas. TINIAN: Five, June 1946, Townes; two, Mar. 1945, Dybas. AGIGUAN: Two, June 1952, Kondo; four, Nov. 1955, Davis. GUAM: One, June 1945, Bohart and Gressitt; five, Oct. 1952, Krauss.

This species was described by Bergroth from New Caledonia and should be found in the Bismarck Archipelago and adjacent islands.

Genus **Glaucias** Kirkaldy

Zangis Stål, 1867, Öfv. K. Vet.-Akad. Förh. **24** (7) : 514.
Glaucias Kirkaldy, 1908, Entomologist **41** : 124.

I have been fortunate to be able to borrow all of Stål's types and other Stålian identified examples of this genus that are in any way related to species found in Micronesia. These have been very carefully compared with specimens from the territory under consideration in this survey. It is interesting to note that only two previously known species, *G. inornatus* (Stål) and *G. amyoti* (White), occur in Micronesia and that all the others listed here are new and being described for the first time. Several specimens of nymphal stages of one or two unidentified species are also included in the collections.

While the genus ranges all the way from India eastward through Australia and Polynesia, with many species recorded within that range, the following key includes only those species found within the Micronesian area.

Key to Micronesian Species of Glaucias

1. Mesosternal carina well elevated, extended, extending between the procoxae, and there sublamellate, gradually dilating posteriorly and becoming contiguous with elevated, subtectiform, convex metasternum; color pale green or yellow green..**inornatus**

Mesosternal carina only moderately developed, uniform in height and diameter throughout; metasternum feebly elevated in the form of a flat-topped, hexagonal plate; color darker green or fulvous....2

2(1). Rostral segment 3 at least one-fifth longer than 2; rostral apex reaching abdominal sternite 4....3

Rostral segments 2 and 3 equal or subequal; rostral apex barely exceeding posterior margin of abdominal sternite 2, usually shorter....4

3(2). Species pale fulvous with greenish tints, somewhat translucent in appearance; punctures ferruginous; abdominal tubercle much reduced, not reaching metasternum; margins of head not fuscous or piceous....**lucidus**

Species dark olivaceous green, punctures concolorous; opaque in appearance; margins of head piceous, abdominal tubercle stout, reaching metasternum ....**robustus**

4(2). Species brownish or fulvous, punctures fuscous; connexivum bicolored, its inner half broadly fuscous, its outer half fulvous; apical angles of segments piceous; basal plates of female genital valves roundly equilateral, triangular; dorsal tips of male paramere minutely bilobed; proctiger in male strongly, acutely carinate....**fulvescens**

Species green; connexivum pale, concolorous; segmental apical angles piceous or not; proctiger in male obtuse or sulcate....5

5(4). Apex of scutellum ivory white with a pair of subapical marginal, piceous blotches at base of white....6

Apex of scutellum concolorous green, without subapical piceous blotches....7

6(5). Head obsolescently punctured, essentially impunctate; punctures on pronotum very pale brown, barely contrasting with greenish background; basal plates of female genital valves transversely subtriangular; parameres of male, taken together as a pair, produce a lyriform outline from posterior aspect; color medium green....**lyratum**

Head, pronotum, and scutellum strongly and contrastingly punctured with piceous; basal plates of female genital valves stout and distinctly quadrangular, essentially square; color bright blue green; male unknown.... ....**eburnopictus**

7(5). Margin of head and anterior third of lateral pronotal margin fuscous; connexival apical angles conspicuously piceous; color distinctly olivaceous.... ....**ponapensis**

Margin of head and anterolateral pronotal margin concolorous green, frequently with yellow tints; if abdominal angles are piceous they are usually minutely so; color medium to dark green....**amyoti**

24. Glaucias inornatus (Stål).

Zangis inornata Stål, 1871, Öfv. K. Vet.-Akad. Förh. **27** (7): 633.

Glaucias inornatus, Kirkaldy, 1909, Cat. Hemipt. **1**: 126.

DISTRIBUTION: Philippines, Mariana Is. (Guam), Caroline Is. (Palau).

S. MARIANA IS. GUAM: One, Fullaway.

PALAU. BABELTHUAP: Five, May 1957, Sabrosky. KOROR: Three, July 1952, Beardsley; one, Apr. 1957, Sabrosky; one, Nov. 1947, Dybas; one, Jan. 1948, Dybas; one, Feb. 1948, Dybas; one, July 1952, Gressitt. PELELIU: Two, May 1957, Sabrosky.

This species probably was introduced from the Philippines, its type lo-

cality. It is pale green and semiglossy and can easily be distinguished from other species in the genus by the elevated, subtectiform metasternum and well-developed mesosternal carina. The species lacks various black markings which are usually found on its relatives. The head sometimes has yellow clouding near the eyes. It measures 12.0 mm. to 12.5 mm. long; 7.5 mm. to 8.0 mm. wide.

25. Glaucias lucidus Ruckes, n. sp. (fig. 7, *a*).

Narrowly oval, glossy, somewhat translucent; above, pale fulvous suffused with pale green tints, producing an over-all olive-drab appearance (possibly more greenish in life), more flavescent below; punctures ferruginous, small, sparse, and rather regularly distributed.

Head more than one-fourth longer than wide between eyes (110:80), a few fine, ferruginous punctures arranged in four to six longitudinal rows before and between ocelli, then impunctate to apex; disc transversely and obliquely finely rugose, as is typical for genus; lateral margins sinuate before eyes, apex evenly rounded, tylus subprominent. Antennae relatively long, reaching apex of scutellum, fulvous with apices of segments 3, 4, and 5 darkening apically; segmental ratios 30:60:85:100:96 (segment 3 longer than 2, segments 4 and 5 subequal).

Pronotum less than 2.5 times as wide across humeri as long medially (285:115); disc smooth, glossy, without fine rugae; punctures brownish to ferruginous, some concentrated on posterior third of disc and in anterior apical corners; no anterior submarginal groove evident; anterolateral margins mildly reflexed; humeri obtusely rounded and not produced. Scutellum almost equilateral (190:200), disc somewhat convex, smooth, glossy, without rugae; punctures brown to ferruginous, small, rather regularly distributed, becoming obsolete apically so that apex is essentially impunctate. Hemelytra more regularly and densely punctured, embolium obsolescently punctured; membranes hyaline, slightly exceeding apex of abdomen, with numerous subparallel, concolorous veins. Connexivum moderately exposed, concolorous, apical segmental angles minutely piceous or fuscous and hardly produced. Tergum orange to orange brown.

Venter flavescent with light-green suffusion laterally and on legs and rostrum; thoracic pleura obscurely and finely punctured; abdomen very finely rugulose laterally. Mesosternal carina low; metasternum hexagonal, flat-topped. Rostrum very long, apex reaching base of fifth abdominal sternite; segment 3 about one-fifth longer than 2, at least apical half of segment 4 piceous; segmental ratios 60:100:120:70. Median basal tubercle of abdominal segment 2 reduced, not reaching metasternum. Legs fulvous with greenish suffusion, especially tibiae which are plano-sulcate.

Male genital segment broadly excavated between two lateral, retrorse obtuse lobes, inner margins of which are inflexed and fuscous dorsally; apical margin of segment sinuate with a submarginal impression; heads of paramere very narrowly elongate triangular, when viewed from posterior aspect mildly sigmoid in form, their ectal margins parallel to two subtriangular tubercles arising from inner wall of capsule; apices of parameres acutely rounded, not quite reaching superior margin of segment. Basal plates of female valves about as long as wide, subtriangular in outline, apical margins obtusely rounded.

Holotype, male, 13.0 mm. long, 7.0 mm. wide across humeri; allotype, female, 13.5 mm. long, 7.25 mm. wide across humeri.

Holotype, male (US 65061), Mt. Wakapp, Kusaie, Apr. 27, 1953, Clarke. Allotype, female (US), Kusaie, Hill 541, Apr. 16, 1953, Clarke.

Paratypes, Kusaie: Male (US), two females (one to AM), Mwot, Apr. 10, 1953, female (KU), Aug. 7, 1937, Esaki; Mt. Wakapp, male (US), Apr. 17 1953, female, Apr. 27, 1953; female, Mt. Matante, Feb. 17, 1953; Hill 1010,

female (AM), Feb. 4, 1953, female, Apr. 1953; two females (one to AM), Mutunlik, Mar. 12, 1953; female, Hill 541, Apr. 16, 1953; male (AM), Malem River, Mar. 17, 1953. All collected by Clarke, except as otherwise noted.

DISTRIBUTION: Caroline Is. (Kusaie).

26. Glaucias robustus Ruckes, n. sp. (fig. 7, *b*).

Broadly oval, large, 15-16 mm. long, as big and of the same form as *G. nigro-marginata* (Stål), with similar over-all puncturation, semiglossy, dark olive green. Margin of head, a small dash over each antennal tubercle, apical angles of abdominal segments, extreme apex of rostrum, and only anterior apical angle of pronotum, piceous; anterolateral margin of pronotum reflexed and brighter green with an intramarginal broad yellowish band.

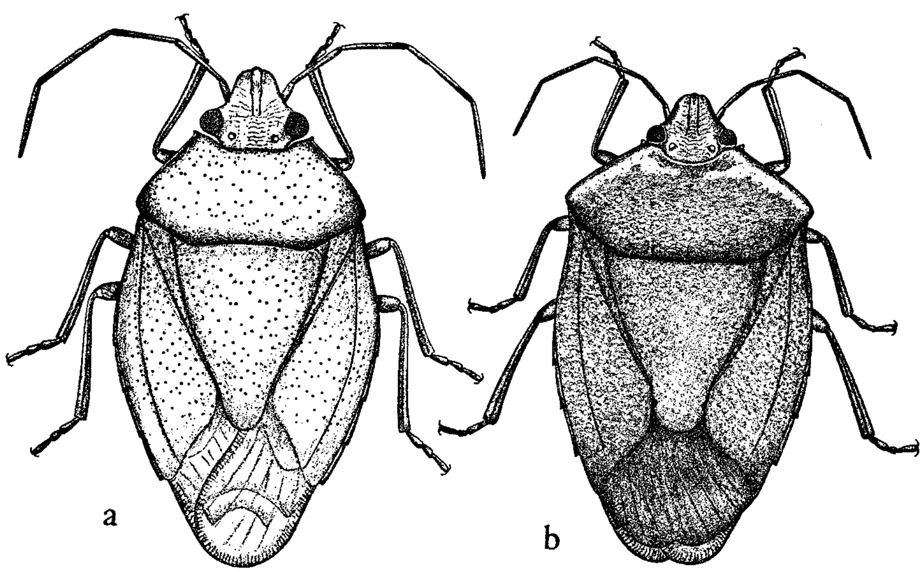


FIGURE 7.—a, *Glaucias lucidus,* holotype; b, *G. robustus,* holotype.

Head a little less than one-third longer than wide between eyes (110: 85), apex somewhat narrowly rounded; disc rugulose, provided with yellowish tints, apex of tylus sometimes darker; a few punctures on vertex and apices of juga. Antennae long and slender, nearly reaching end of frenum, pale yellowish green, terminal three segments becoming reddish fulvous; segmental ratios 28: 60: 100: 110: 100 (segment 3 about two-thirds longer than 2 and equal to 5); in *nigro-marginata* (type specimen) the ratios are 27: 50: 78: 90: 92 (segment 3 only about half again as long as 2 and shorter than 5).

Anterior margin of pronotum arcuately excavated, then calloused subtruncate behind eyes, not perceptibly impressed submarginally; pronotal surface vaguely rugose with an admixture of larger and smaller punctures which are rather thinly distributed on disc. Scutellum provided with a small fuscous spot on each postfrenal margin, midway to apex; surface somewhat more evidently rugose than pronotum, punctures rather regularly distributed. Hemelytral punctures very evenly distributed and more dense than elsewhere;

basal third of costal margin pale yellow; membrane hyaline with concolorous veins. Connexivum ochraceous to sordid yellow, apical angles mildly produced.

Venter slightly lighter than dorsal surface. Mesosternal carina well developed, uniform in height and thickness throughout. Metasternal plate hexagonal, flat-topped, its posterior edge not emarginate. Abdominal tubercle conical, stout, and reaching metasternum. Legs olivaceous with a fulvous cast. Rostrum long, pale yellowish green to fulvous, only extreme tip piceous and reaching, at least, to base of fourth abdominal sternite; segmental ratios 50:120:150:80 (segment 3 about one-fourth longer than 2 and almost twice as long as 4); in *nigro-marginata* (type specimen) the ratios are 40:70:52:50 (segment 3 shorter than 2 and subequal to 4), with at least terminal half of last segment piceous and barely passing hind coxae.

Male genital segment weakly impressed below apical margin; apical margin straight, inner surface provided with a broad V-shaped notch; lateral apical lobes produced posteriorly, their ventral margins inflected and ending laterally in a small, free, triangular tab, the outer edge of which lies parallel to dorsal margin of lateral lobe; heads of parameres subpyriform with a partial spiral twist, their posterior faces flat and vaguely wrinkled vertically, their apices acutely rounded, not attaining superior margin of segment. Basal plates of female genital valves more or less equilaterally triangular, their apical angles obtusely rounded, their inner margins contiguous, a small triangular notch apically. Holotype, male, 15.0 mm. long; 9.5 mm. wide across humeri; allotype, female, 16.0 mm. long; 10.0 mm. wide across humeri.

Holotype, male (US 65063), Koror, Palau Is., at light, July 12, 1953, Beardsley. Allotype, female (US), Koror, Apr. 23, 1957, Sabrosky. Paratype, female (AM), Koror, at light, July 2-5, 1953, Beardsley.

DISTRIBUTION: Caroline Is. (Palau).

It is apparent from the foregoing description that this new species is most closely related to *G. nigro-marginata* (Stål) but differs by having longer antennae with different segmental ratios; a longer rostrum, likewise with different segmental proportions; a darker green color with the black marking on the pronotal margin restricted to the area of the anterior apical angle. When seen side by side these two species are readily distinguishable from one another.

27. **Glaucias fulvescens** Ruckes, n. sp. (fig. 8, *a*).

Oval, semiglossy; over-all color fulvous, consisting of a light-tan background overlaid with moderately coarse dark-brown to fuscous punctures, sparsely and irregularly distributed on pronotum, more regularly so on scutellum and densely and very regularly so on hemelytra; sometimes an indication of faint rubescence on lateral pronotal disc. Smaller than average size for genus, about 10 to 11 mm. long.

Head one-third longer than wide between eyes (80:60); disc transversely and obliquely rugulose, as is common for genus; punctures fine, brown, and more or less confined to juga; two parallel, short, fuscous, impressed, longitudinal stripes at base of tylus; extreme margins of head slightly darker than disc, moderately sinuate before eyes, apex narrowly rounded. Antennae about half length of body, fulvous with segments 3 and 4 and major portion of 5 darkening apically, sometimes rubescent there; segment 3 about one-third longer than 2; segmental ratios 20:36:50:60:65.

Pronotum about 2.5 times as wide across humeri as long medially (230:90); a transverse line of fine, congested punctures just behind anterior margin, ending at inner angles of eyes; anterolateral margin straight, barely reflexed, with a faint indication of a parallel, submarginal yellowish band through which runs a line of small fuscous punctures on anterior half; cicatrices medium brown, with paler centers, between them a smooth sordid-

yellow area and somewhat behind them a more or less pronounced, but irregular band of fuscous punctures; remaining portion of disc with scattered fuscous punctures interspersed with numerous fine ferruginous ones; humeri vaguely infuscated, humeral angles obtuse. Scutellum with more or less regularly spaced, fuscous punctures; apex broadly pale fulvous, impunctate with a conspicuous, anteapical, triangular fuscous patch on each margin. Hemelytral punctures fuscous, very regularly spaced and denser than on other punctate parts; primary vein between embolium and corium fuscous and conspicuous; membrane very faintly tinted, veins very pale fulvous. Connexivum barely exposed, very finely punctured, a broad inner margin and segmental incisures and segmental angles fuscous to piceous, remaining portions sordid ochraceous; tergum bright orange brown.

Under surface paler fulvous, a small fuscous dash above each antennal tubercle; thoracic pleura finely and densely punctured brown; an impressed thin, brown, submarginal line along anterior border of propleuron, continued posteriorly as a heavier, arcuate line

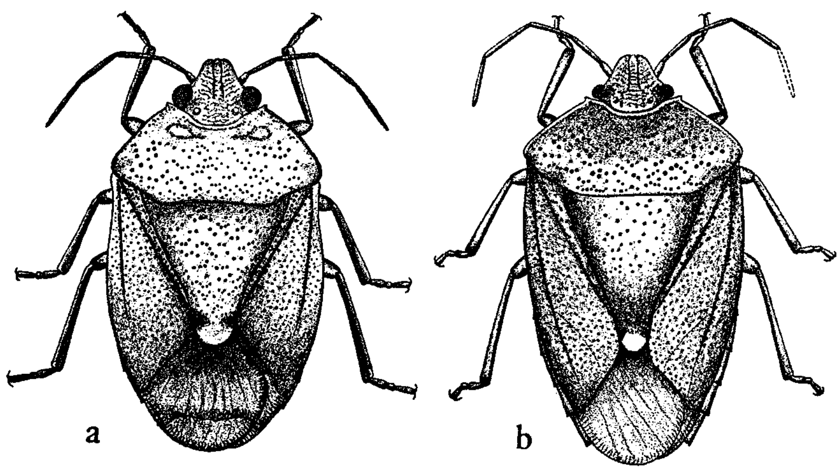


FIGURE 8.—**a**, *Glaucias fulvescens,* holotype; **b**, *G. eburnopictus,* holotype.

below anterolateral margin. Abdomen impunctate but very finely rugulose, as is common for the genus; spiracular margins brown, a minute brown to fuscous dot obliquely entad of each spiracle. Mesosternal carina well developed, equal in diameter and height throughout its length. Metasternum elongate, hexagonal, feebly impressed, not emarginate posteriorly. Abdominal tubercle short and stout but still reaching metasternum. Rostrum exceeding second abdominal sternite, apical half of terminal segment fuscous to piceous; segments 2 and 3 equal or subequal, segment 4 about one-fourth shorter than 3; segmental ratios 40 : 70 : 70 : 52. Legs light fulvous, immaculate, darkening slightly toward tibial apices and tarsi.

Male genital segment subovate, apical margin deeply V-shaped, distinctly but shallowly sinuate at center; lateral apical lobes produced posteriorly, their apices acutely rounded, and their margins narrowly inflexed; ventral disc broadly impressed submarginally; heads of parameres upright, elongate, extrorsely bent at middle, their apices piceous, shallowly bifurcated, not reaching superior margin of segment; proctiger provided with a prominent, longitudinal, high carina. Basal plates of female genital valves subtriangular, their surfaces weakly convex, their margins curved and apical angles obtusely rounded.

Holotype, male, 10.0 mm. long, 6.25 mm. wide across humeri; allotype, female, 11.75 mm. long, 6.5 mm. wide across humeri.

Holotype, male (CM), As Mahetog area, Saipan, Mariana Is., Apr. 29, 1945, Dybas. Allotype, female (CM), Sosan Isthmus, Rota, Mariana Is., Oct. 27, 1945, Necker. Paratypes, Saipan: Two, Apr. 25, 1945, Dybas; two males, female (AM), As Mahetog area, Apr. 30-May 1, 1945, Dybas; two males (CM), Apr. 18-May 8, 1945, Dybas; female (KU), Garapan, Mar. 4, 1938, Aoki; three males, two females (US), Ants Valley, June 20, 1946, Oakley. Rota: Five, June 20-23, 1946, Townes; two females (one, AM), Sosan Isthmus, Oct. 27, 1945, Necker. Guam: Male, 1911, Fullaway; female, no date, Liming; male, female (BISHOP), Agana, Oct. 10-12, 1952, Beardsley.

DISTRIBUTION: Mariana Is.

This is a rather unique species for the genus, being darker brown with a more uneven dorsal surface than usually appears in other species. In all basic characteristics it appears to belong to the genus *Glaucias,* yet the lack of pronounced reflexed anterolateral pronotal margin and the peculiarly divaricate apices of the male parameres seem to segregate it from all other known species.

28. **Glaucias lyratum** Ruckes, n. sp.

Oval, moderate in size, 14-15 mm. long; glossy, medium green with a faint bluish cast; punctures very light brown or concolorous green; apex of scutellum pale yellow or old ivory, preceded by a marginal, subtriangular, fuscous to piceous blotch on each side; punctures on hemelytra much finer and denser than elsewhere.

Head a little more than one-fourth longer than wide between eyes, surface finely strigose, punctures essentially obsolete, a few indistinct ones at vertex and some very fine but vague ones toward apices of juga; margins feebly sinuate before eyes and then somewhat less convergent to a rounded apex than in related species; tylus slightly prominent apically; antennae flavescent, almost concolorous throughout, basal segment with a greenish suffusion, segments 3 to 5 very finely and densely short setose; segmental ratios 25:52:80:95:100 (segment 3 about half again as long as segment 2, the terminal three segments progressively increasing in length).

Pronotum 2.5 times as wide as long (300:120); anterior margin subtended by a well-defined, transverse line of light brown, congested punctures which end abruptly just behind eyes; other punctures paler brown to concolorous green, moderate in size, wide spaced without finer punctures between them on major portion of disc, then becoming smaller and a little denser toward posterior margin; anterolateral margins straight, barely reflexed; humeri feebly tumid, humeral angles roundly rectilinear, sometimes flavescent and feebly prominent. Scutellum about one-fifth longer than wide at base, punctures on convex central portion of disc very pale brown and wide-spaced, those on broad lateral and apical portions greenish, finer and denser, ivory apex impunctate. Punctures on hemelytra concolorous green, very fine and very dense, especially apically and on embolium; membrane vitreous and exceeding apex of abdomen. Connexivum yellowish green, moderately exposed, punctures concolorous, very fine and very shallow; apical segmental angles minutely piceous, very acute, and minutely produced.

Venter yellowish green; thoracic punctures concolorous and very fine and shallow. Rostrum flavescent to fulvous, apex fuscous reaching middle of third abdominal segment; segmental ratios 50:80:80:60 (segments 2 and 3 equal). Mesosternal carina mildly elevated, uniform in height and diameter throughout. Metasternum hexagonal, flat-topped or very shallowly concave, emarginate apically. Tubercle of second abdominal sternite well

defined, slightly flattened and fitting into apical emargination of metasternum. Spiracles yellowish green or pale yellow. Legs yellowish green, becoming fulvous toward tarsi.

Male genital segment subglobular, lateral apical processes somewhat acutely rounded and retrorsely produced so that apical margin of segment (as seen from ventral aspect) forms a broad and deep "U," each lateral margin of which is somewhat elevated into a subcalloused, carina-like ridge about at middle; base of "U" provided with an inner, central, secondary, deep emargination or sinus; heads of parameres narrowly pyriform, each with a partial spiral twist, dorsal apices tending to be bilobed, outer margins sigmoid; the two parameres when taken together and observed from posterior aspect form a lyre-like figure, hence the specific name *lyratum;* proctiger elongated longitudinally, deeply sulcate medially. Basal plates of female genital valves rounded triangular, about half again as broad as long, apical angles obtusely rounded; median plate prominent, transversely elliptical; apical plates elongated, narrowly triangular, reaching apex of abdomen, their inner apical margins well separated, not at all contiguous there. Holotype, male, 14.5 mm. long, 7.5 mm. wide across humeral angles; allotype, female, 15.0 mm. long, 8.0 mm. wide across humeral angles.

Holotype, male (US 66414), Yigo, Guam, Mariana Is., July 2, 1946, Townes. Allotype, female (BISHOP 2741), Pt. Ritidian, Guam, Mariana Is., light trap, Aug. 7, 1945, Gressitt. Paratypes, three males (BISHOP, AM), Pt. Ritidian, Guam, Mariana Is., Aug. 1-7, 1945, Gressitt.

DISTRIBUTION: S. Mariana Is. (Guam).

This new species, although differing markedly in coloration and puncturation from *Glaucias eburnopictus,* also a new species herein described, is nevertheless related to it. The bilobed apices of the parameres in the male, the impunctate, pale-yellow apex of the scutellum with its adjacent marginal black or fuscous blotches, and the barely reflexed anterolateral pronotal margins are some of the characters that these two have in common and which, as far as I know, do not appear in combination in any other species of *Glaucias.* There is a superficial resemblance between *G. lyratum* and *G. eburnopictus,* but the latter is somewhat smaller, with a more greenish-blue tone, and provided with jet-black punctures on the head, pronotum, and scutellum; moreover, the basal plates of the female genital valves in *eburnopictus* are distinctly quadrangular while those of *lyratum* and *fulvescens* are subtriangular.

29. Glaucias eburnopictus Ruckes, n. sp. (fig. 8, *b*).

Narrowly oval, glossy, bright blue green above, pale blue green with yellowish suffusion beneath; head, pronotum, and scutellum with small to medium-sized, jet-black punctures; hemelytra with finer, denser, concolorous, blue-green punctures.

Head about one-eighth longer than wide between eyes (90:80), transversely and obliquely rugose as is typical for the genus; punctures fine, intense black, a short longitudinal line of four to six congested ones just before, and a longer row of 12 to 15 well-separated ones just entad of each ocellus; remaining punctures confined to disc (not margins) of juga; tylus impunctate. Antennae long, slender, sordid yellow, darkening slightly apically, segments progressively increasing in length; segmental ratios 20:50:70:85:90 (segment 2 shorter than 3).

Pronotum about 2.5 times as wide across humeri as long medially (320:130); anterior margin slightly elevated and subtended by a transverse, impressed row of fine, congested black punctures which do not quite reach anterior apical angles; disc provided with coarser

and more widely spaced, black punctures arranged in vague, transverse, wavy lines, producing a coarse, but not prominent rugosity there; anterolateral margins straight, somewhat thickish, impunctate and feebly, broadly reflexed; humeral angles rectilinear or mildly obtuse and weakly produced. Scutellum very slightly longer than wide (210:200); coarser, wide-spaced, jet-black punctures confined to basal two-thirds of disc with finer and greener ones on lateral and distal portions; apical one-tenth impunctate and ivory white with a conspicuous black spot on each margin at juncture of green and ivory areas. Hemelytra finely and densely concolorously punctured, an obscure line of black punctures on embolium near base; apical margin essentially straight or very feebly sinuate; membrane and veins clear hyaline. Connexivum narrowly exposed, yellowish green, apical segmental angles acute, minutely piceous and barely produced.

Venter paler blue green, shading to yellowish green centrally; a very short piceous dash over each antennal tubercle; punctures confined to thoracic pleura and there concolorous with background; lateral portions of abdomen finely rugulose, centrally glossy; spiracles concolorous, each subtended by a short transverse, fuscous to piceous dash. Mesosternal carina moderately developed, uniform in height and diameter throughout its length, or barely dilated posteriorly. Metasternum broadly hexagonal, flat-topped, and feebly emarginate behind to receive the short but stout, subconical, acute tubercle of abdominal segment 2. Femora grass green, tibiae becoming yellowish green to fulvous. Basal three segments of rostrum greenish, terminal one fuscous and reaching abdominal segment 2; segmental ratios 45:80:80:60 (segments 2 and 3 equal, segment 4 three-fourths the length of 3).

Basal plates of female genital valves stout, subquadrangular, their basal angles rounded, their apical angles rectilinear and apical margins of the two, taken together, transverse; outer basal area of each plate tumid and impunctate; a deep impression adjacent to external apical angle of each plate, subapical portion of disc somewhat transversely impressed; most of surface of each plate very finely fuscopunctate. Holotype, female, 14.5 mm. long to apex of membrane, 8.5 mm. wide across humeri.

Holotype, female (US 65060), Sabana, Rota, Mariana Is., June 19, 1946, Townes. Paratypes, female (CM), Sosan Isthmus, Rota, Oct. 27, 1945, Necker; female (AM), Rota, Apr. 20, 1946, Townes.

DISTRIBUTION: S. Mariana Is. (Rota).

The characters that separate this species from others in the genus are the restriction of the black puncturation to the head, pronotum, and scutellum; the totally fuscous terminal rostral segment, the apex of which surpasses the hind legs but does not reach the third abdominal sternite; the broadly reflexed anterolateral margins of the pronotum; the robust, subquadrangular form of the basal plates of the female genital valves; and, of course, the ivory-colored apex of the scutellum, which led to the selection of the specific name *eburnopictus*. The absence of a male at the present time precludes closer determination of allied relationship to other known species.

30. **Glaucias ponapensis** Ruckes, n. sp. (fig. 9).

Very closely allied to *G. nigro-marginata* (Stål) but slightly smaller, bright pea green and more glossy; margin of head, a short dash above each antennal tubercle, and anterior fourth of anterolateral pronotal margin light fuscous; apical angles of abdominal segments piceous.

Head about one-third longer than wide between eyes (112:85), a faint suffusion of yellow apically; transversely and obliquely finely striate, not coarsely rugulose as in *nigro-marginata;* numerous very fine, concolorous punctures densely distributed on disc, some found on tylus; lateral margins barely sinuate before eyes, apex somewhat narrowly

rounded. Antennae proportionately short, barely reaching middle of scutellum, light greenish, apical third of segment 3 fulvous, apical halves of segments 4 and 5 rufescent; segmental ratios 30 : 55 : 75 : 90 : 92 (segment 3 about one-third longer than 2; segments 4 and 5 subequal).

Pronotal disc with an admixture of coarser and finer punctures, the former widely scattered centrally, the latter much denser, a transverse row of them behind weakly elevated anterior margin; surface glossy and very vaguely, irregularly rugulose; a moderately broad, posteriorly evanescent, pale yellowish-ochraceous band paralleling narrowly reflexed anterolateral margins. Scutellum glossy, rather smooth, not evidently rugulose, without the presence of two small, fuscous, anteapical marginal spots and with few coarser punctures widely scattered on the central portion of disc between the numerous finer ones. Connexivum narrowly exposed, concolorous, finely punctured, segmental angles rectilinear to acute and feebly produced.

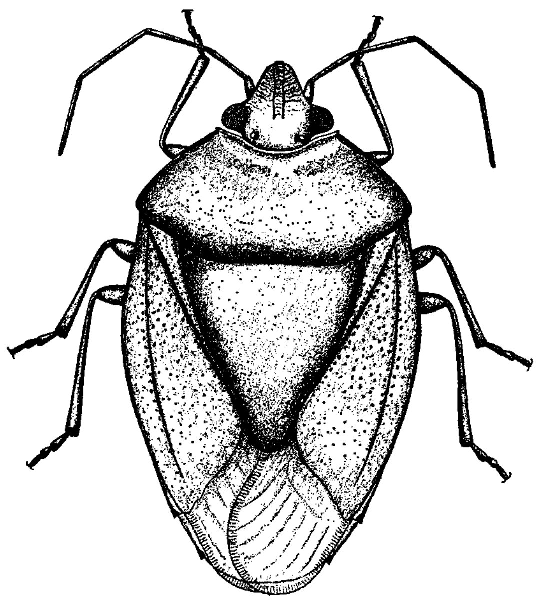


FIGURE 9.—*Glaucias ponapensis,* holotype.

Venter paler green, centrally flavescent; punctures, as in other species, confined to thoracic pleura; abdomen very finely rugulose laterally. Mesosternum distinctly carinate, carina uniform in width and height throughout. Metasternum hexagonal, flat-topped, and feebly emarginate behind. Basal tubercle of second abdominal segment short, stout, subconical, and reaching metasternum. Apex of rostrum exceeding base of third abdominal sternite, apical half of terminal segment fuscous; segmental ratios 50 : 85 : 85 : 60 (segments 2 and 3 equal, and 4 not quite three-fourths length of 3); in *nigro-marginata* (type specimen) the proportions are 40 : 70 : 52 : 50 (segment 2 somewhat longer than 3 and 4 only slightly shorter than 3), the apex not exceeding the hind coxae. Legs light green, terminal segment of tarsi becoming slightly fulvous apically.

Basal plates of female genital valves subtriangular, slightly wider than long, apical inner angle of each roundly rectilinear, a minute apical notch between the two plates. Holotype, female, 14.25 mm. long, 8.5 mm. wide across humeri.

Holotype, female (US 65062), Colonia, Ponape, Caroline Is., taken from *Morinda citrifolia,* Aug. 13, 1948, Oakley.

DISTRIBUTION: Caroline Is. (Ponape).

Without a male specimen for comparison of the genitalia with allied species, it is difficult to make a definite decision as to the phylogenetic relationship of this new form. The least it can be is a subspecies of *G. nigro-marginata* (Stål). The distinctly bright green color, the glossy and smooth appearance of *ponapensis,* its slightly smaller size, but proportionately longer rostrum and narrower and longer head, the different coloration of the antennae, the evanescent fuscous line on the anterolateral pronotal margin with its intramarginal yellowish band readily separate the two. It is my conviction that *ponapensis* merits specific status of its own.

31. Glaucias amyoti (White).

Nezara amyoti White, 1847, Voy. Erebus and Terror (Zool.).
Rhaphigaster amyoti, Dallas, 1851, List Hemipt. Ins. Brit. Mus. **1**: 278.
Zangis amyoti, Stål, 1876, K. Sven. Vet.-Akad., Handl., **14** (4): 93.
Glaucias amyoti, Kirkaldy, 1909, Cat. Hemipt. **1**: 125.

DISTRIBUTION: Australia, New Zealand, Mariana Is., Caroline Is.

S. MARIANA IS. SAIPAN: One, Dec. 1944, Dybas; one, Aug. 1945, Dybas. TINIAN: One, Oct. 1945, Hagen. ROTA: One, June 1952, Kondo. GUAM: One, June 1945, Bohart and Gressitt; one, Aug. 1945, Gressitt; one, Oct. 1952, Krauss; two, 1937, Oakley; one, Jan. 1949; Mt. Lamlam, one, Oct. 1957, Krauss.

PALAU. BABELTHUAP: Ngiwal, one, Dec. 1952, Gressitt; Ngatpang, three, light trap, Dec. 1952, Gressitt; Iwang, one, Dec. 1952, Gressitt. KOROR: Nine, Nov. 1947-Jan. 1948, Dybas; five, light trap, Dec. 1952, Gressitt; two, July 1952, Beardsley; one, May 1957, Sabrosky. PELELIU: One, Feb. 1938, Esaki; two, Aug. 1945, Dybas; one, May 1957, Sabrosky; two, light trap, Dec. 1952, Gressitt. ANGAUR: One, Apr. 1936, Kondo.

YAP. Eight, July-Aug. 1950, Goss; three, Sept. 1952, Krauss; two, Sept. 1939, Esaki; two, June 1957, Sabrosky.

TRUK. Two, Sept. 1952, Beardsley; three, Mar. 1949, Maehler. WENA (Moen): 10, Feb.-Mar. 1949, Potts.

PONAPE. One, Jan. 1953, Gressitt.

This species might easily be confused with *G. inornatus* (Stål), but examination of the mesosternal carina and the metasternum will quickly differentiate the two. The species *amyoti* usually has piceous connexival angles and a fuscous or piceous dash above the antennal tubercles, characters lacking in *inornatus*. They are both about the same shade of light green but *amyoti* is somewhat more glossy. It measures 12.0 mm. to 13.0 mm. long; 7.25 mm. to 7.75 mm. wide.

Genus **Nezara** Amyot and Serville

Nezara Amyot and Serville, 1843, Hemiptera, 143.

32. Nezara viridula (Linnaeus).

Cimex viridulus Linnaeus, 1758, Syst. Nat., ed. **10**: 444.

Nezara smaragdula Amyot and Serville, 1843, Hist. Nat. Ins., Hemipt., 144.

Nezara viridula, Stål, 1865, Hemipt. Africana **1**: 193.

The remaining portion of the extensive synonomy of this species is omitted in order to conserve space.

DISTRIBUTION: Practically cosmopolitan; Bonin Is., Volcano Is., Mariana Is., Caroline Is.

BONIN IS. CHICHI JIMA: Six, June 1949, Mead; two, May 1956, Clagg; 14, Apr. 1958, Snyder; one, May-June 1958, Snyder. HAHA JIMA: One, July 1949, Mead.

VOLCANO IS. IWO JIMA: One, Dec. 1945, Bertram.

N. MARIANA IS. AGRIHAN: Two, July 1945, Holder; five, July 1949, Mead.

S. MARIANA IS. One, Oct. 1952, Krauss; 12, May-Aug. 1945, Bohart and Gressitt. SAIPAN: One, Aug. 1945, Dybas; two, June 1946, Oakley; Matansha, one, Apr. 1946, Krauss; As Mahetog area, one, Nov. 1944, Dybas; two, Nov. 1944, Edgar; two, Dec. 1944; Dybas; one, Mar. 1945, Dybas; one, Aug. 1945, Dybas; one, Oct. 1945, Dybas; Garapan, one, Apr. 1946, Krauss; Halaihai, two, Jan. 1945, Dybas; Chalam Piao, two, Feb. 1958, Krauss. TINIAN: One, June 1945, Townes; 15, Mar. 1946, Hadden; Lake Hagoi, one, Mar. 1945, Dybas; Chulo, one, June 1946, Oakley; Tinian Harbor, six, Apr. 1945, Dybas; two, Nov. 1952, Beardsley. ROTA: One, Oct. 1945, Necker; two, June 1946, Townes. GUAM: Amantes Pt., one, July 1945, Wallace; Agana, one, Feb. 1952; Mt. Lamlam, eight, Oct. 1957, Krauss; Com. Mar. Hill, one, Feb. 1948.

PALAU. BABELTHUAP: One, Aug. 1939, Esaki. KOROR: One, Jan. 1938, Esaki; one, June 1939, Miyake; one, July 1946, Oakley.

YAP. One, Mar. 1949.

TRUK. Two, May 1946, Oakley; four, May 1946, Townes.

PONAPE. Five, Aug. 1946, Oakley.

This widespread species has several varieties, possibly subspecies, but the 120 adults and 33 nymphs examined from Micronesia are of the typical form. It is readily distinguishable from other green pentatomids (mostly species of *Glaucias*) by virtue of its dorsal matte rather than glossy appearance. The dullness is due to the very fine, dense, concolorous puncturation which leaves the surface finely rugulose. In addition, the broadly and obtusely subtecti-

form shape of the abdominal venter and the relatively short ostiolar canal, which ends more or less abruptly about the middle of the metapleuron, are characteristics that make for easy identification. It is a very variable species both as to size and coloration. It measures 10.5 mm. to 15.5 mm. long; 7.0 mm. to 8.5 mm. wide across the humeri. Its food plants are numerous and, in areas under cultivation, it can readily become a pest of economic importance. In Micronesia, it feeds on such crops as rice (*Oryza*), eggplant (*Solanum*), tomato (*Lycopersicum*), beans (*Phaseolus*), cotton (*Gossypium*), corn or maize (*Zea*), cucumbers and melons (cucurbits) as well as many weeds.

Genus **Alciphron** Stål

Alciphron Stål, 1876, K. Sven. Vet.-Akad., Handl. **14**(4) : 67.

33. **Alciphron glaucus** (Fabricius).

Cimex glaucus Fabricius, 1775, Syst. Ent., 174.
Edessa glauca Fabricius, 1803, Syst. Rhyng., 154.
Pentatoma punctum Montrouzier, 1861, Soc. Ent. France, Ann. IV, **1** : 64.
Banasa glauca, Stål, 1866, Berliner Ent. Zeitschr. **10** : 156.
Alciphron glaucus, Stål, 1876, K. Sven. Vet.-Akad., Handl. **14** (4) : 101.

DISTRIBUTION: Australia, New Caledonia, Loyalty Is., Mariana Is.

S. MARIANA IS. SAIPAN: Mt. Tagpochau, one, Jan. 1945, Dybas. ROTA: One, June 1946, Townes. GUAM: Two, Oct. 1952, Krauss; one, 1911, Fullaway; Dededo, one, May 1936, Usinger.

This shiny, obsolescently punctured pentatomid is of intermediate size. The species is dark olivaceous in color with a moderately broad, transverse, ochraceous or reddish band across the pronotum just before the humeri. It is readily differentiated from *Glaucias* and similar-appearing genera by its terete tibiae. It measures 10.0 mm. to 10.5 mm. long; 6.0 mm. to 6.5 mm. wide across the humeri.

Genus **Antestia** Stål

Antestia Stål, 1865, Hemipt. Africana **1** : 82.

34. **Antestia degenera** (Walker).

Pentatoma degenera Walker, 1867, Cat. Hemipt. **2** : 304.
Antestia angulosa Stål, 1870, Öfv. K. Vet.-Akad. Förh. **27**(7) : 630.
Antestia punctatissima Kirby, 1892, Linn. Soc. London, Jour. **24** : 83.
Antestia degenera, Distant, 1902, Fauna Brit. India, Heteropt. **1** : 186.

DISTRIBUTION: Ceylon, Burma, Malay, Indonesia, Philippines, Caroline Is. (Palau).

PALAU. BABELTHUAP: Two, at light, May 1957, Sabrosky. KOROR: One, July 1953, Beardsley.

This species, originally described from Borneo, appears in the extreme western portion of Micronesia, probably having arrived there via the Philippines. It is a small brown species with a conspicuous ivory-yellow apex to the scutellum and subcalloused ivory-yellow to ochraceous, feebly sinuate, anterolateral pronotal margins. It measures 7.0 mm. to 8.0 mm. long; 4.75 mm. wide across the humeri.

Genus **Plautia** Stål

Plautia Stål, 1865, Hemipt. Africana, 1: 82, 191.

This genus of a dozen or more species is distributed through eastern Asia, Indonesia, Moluccas, Philippines, New Guinea and other parts of Melanesia, Australia, and eastern Africa. Species differentiation is based largely on color and color patterns, which is not altogether satisfactory but, at the present time, apparently sufficient to distinguish one species from another. The genus is badly in need of revision.

The range in distribution is now extended to northwestern Micronesia by the presence in the Bonin Islands of the following new species.

35. **Plautia cyanoviridis** Ruckes, n. sp. (fig. 10, *a*).

Sub-oval, glossy, intense dark blue green above and below, mesosternum and central abdominal portion often sordid yellow to ochraceous; clavus and corium dark slate gray with lavender shading; pronotum, scutellum, clavus, and corium black-punctured; other punctures, above and below, concolorous bluish green.

Head finely, densely, and irregularly punctured, surface finely and irregularly rugose; margins weakly sinuate before eyes, apex evenly and moderately rounded; ocelli concolorous green, four times as far apart as distant from eyes; eyes fuscous or darker. Antennae about half length of body, segments 1, 2, and the base of 3 pale blue green, the remainder of 3 and all of 4 and 5 subochraceous; segmental ratios 20: 30: 50: 60: 60 (segment 2 half again as long as 1 and only half as long as 4 or 5).

Pronotum about 2.5 times as wide across humeri as long medially (230: 90); black punctures well-spaced, coarsest centrally, then becoming finer toward anterolateral margins which are straight, subcalloused, and impunctate; a single row of fine punctures just inside anterior and posterior margins, respectively. Scutellum about as long as wide, apex moderately to broadly rounded as is typical for the genus; black punctures wide-spaced and rather regularly distributed, becoming somewhat finer and fading apically to concolorous green; extreme apex impunctate and sometimes paler. Hemelytra as specified above, black punctures regular and dense; apical margin feebly convex arcuate, external angle roundly acute; membrane very pale fuliginous with a large, subtriangular dark-brown basal patch; veins concolorous. Connexivum well exposed, dark olivaceous green, finely and densely punctured, posterior angles of segments rectilinear to weakly acute, minutely piceous and barely produced. Tergum very dark metallic blue and very finely and very densely punctured.

Rostrum paler green, apex fuscous, reaching the third abdominal sternite; segmental ratios 24: 47: 42: 34 (segment 2 slightly longer than 3, the latter almost one-third longer than 4). Mesosternum ochraceous yellow, its median carina well-developed and pale green. Metasternum small, sordid ochraceous to muddy green, narrowly hexagonal, flat-topped.

Median portion of second abdominal sternite mildly tumid. Legs blue green, tarsi becoming fulvous or ochraceous. Central portion of abdominal disc paler, muddy yellow green, obsolescently punctured, broader lateral portions very finely and densely punctured. Spiracles concolorous.

Male genital segment transversely oval, widely open above, contents totally visible, margins moderately thin and not inflected, bordered both internally and externally with a brush of long, thin, pale hairs; apical margin broadly and shallowly sinuate with a very minute median notch; heads of parameres large, subquadrangular, outer margins fuscous, inner dorsal angle elongated, acute, lateral angle very obtusely rounded, inner faces divergent. Basal plates of female genital valves broadly subtriangular, inner basal angles rounded, lateral apical angles acute, inner apical angles rectilinear, ental margins of plates not contiguous, leaving an elongate space between them; disc of each plate somewhat triradiately tumid centrally and fuscous there. Holotype, male, 8.25 mm. long, 5.00 mm. wide across humeri; allotype, female, 9.25 mm. long, 5.75 mm. wide across humeri.

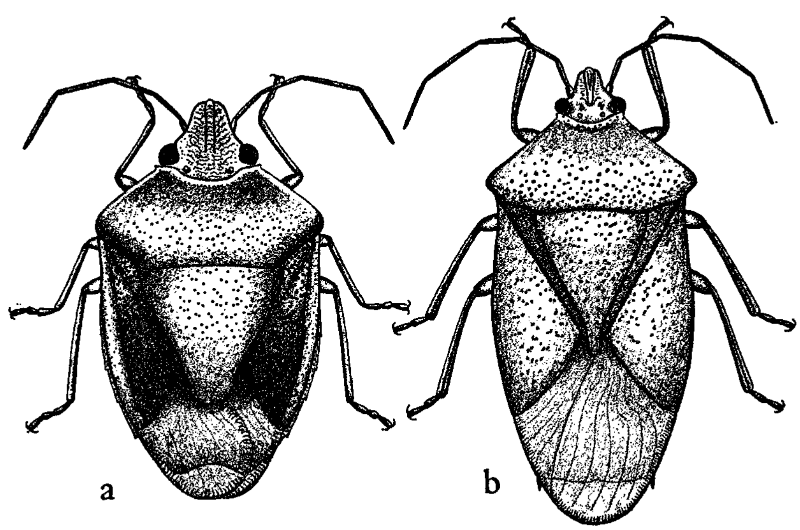


FIGURE 10.—a, *Plautia cyanoviridis,* holotype; b, *Elasmostethus gracilis,* holotype.

Holotype, male (US 65059), Chichi Jima, Bonin Is., May 12, 1958, Snyder. Allotype, female (US), Chichi Jima, June 27, 1959, Mead. Paratypes, three males (US, BISHOP), two females (US, BISHOP), Chichi Jima, Bonin Is., June 27, 1949, Mead; male (AM), female (AM), May 5-June 9, 1958, Snyder. Other specimens, four, Chichi Jima, Bonin Is., July 10, 1951, Bohart.

DISTRIBUTION: Bonin Is. (Chichi Jima).

The distinguishing characteristics of this species are its brilliant blue-green color with the black punctures restricted to the parts already specified; the unique pattern of the male genital segment where the subquadrangular

heads of the parameres are in strong contrast to the subtriangular or bifurcated heads found in some related species; and its smaller than average size. This new species is apparently limited to the Bonin Islands and may be related to species found in adjacent Japan, such as *P. crossota* var. *ståli* Scott and *P. splendens* Distant, although this may not necessarily be so.

SUBFAMILY DINIDORINAE STÅL

Dinidorina Stål, 1870, K. Sven. Vet.-Akad., Handl. **9** (1): 79.

Genus **Megymenum** Laporte

Megymenum Laporte, 1832, Essai Hemipt., IN Mag. Zool., 51, 52.

36. Megymenum affine Boisduval.

Megymenum affine Boisduval, 1835, Voy. Astrolabe, Ent. **2**: 633, pl. 11, fig. 12.

DISTRIBUTION: Caroline Is., New Guinea, New Hebrides.

TRUK. WENA (Moen): nine, taken from screen, Feb. 1948; one, Feb. 1949, Potts; one, Mar. 1949, Potts; one, Apr. 1949, Potts; Tol Netuta, three, Apr. 1949, Potts.

This dark-brown species with a slight metallic cast is easily differentiated from other pentatomids by its somewhat rough surface, erose body outline, slightly explanate abdomen, and four-segmented antennae. The head is concave, as seen from above, the hemelytra membranes are opaque, pale flavescent with reticulate venation and the scutellum is somewhat foreshortened, not reaching beyond the middle of the abdomen. It measures 12.0 mm. to 12.5 mm. long; 6.25 mm. wide across the humeri.

FAMILY ACANTHOSOMIDAE STÅL

Acanthosomida Stål, 1864, Hemipt. Africana **1**: 33, 219.

Genus **Elasmostethus** Fieber

Elasmostethus Fieber, 1860, Europ. Hemipt., 78, 328.

The genus is essentially holarctic, being found in the United States, Canada, northern Europe and eastern Asia (Siberia and Japan). There are not many species in the genus but each is very distinctive in its own right. A new one is now being added from Micronesia.

37. Elasmostethus gracilis Ruckes, n. sp. (fig. 10, *b*).

Closely allied to *E. interstinctus* (Linnaeus) but not as robust, with more slender legs and antennae, with smaller and more shallow punctures and more acute humeral angles. Subelliptical or narrowly ovate; yellow fulvous with brown and ferruginous punctures.

Head four-fifths as wide between eyes as long (40:50), almost impunctate except for only three or four small ferruginous punctures before each ocellus; margins before eyes sinuate and mildly reflexed there; antennae slender, concolorous fulvous, segment 2 longer than 3; segmental ratios 22:50:40:58:50 (segments 2 and 5 equal, 4 the longest). Eyes fuscous, ocelli light garnet.

Pronotum about twice as wide across humeri as long medially (190:90); anterolateral margins broadly impunctate; an irregular, double row of punctures just behind very weakly impressed anterior margin, with only one or two punctures behind each eye; punctures densest and largest on posthumeral area of disc; most punctures ferruginous or dark brown; humeri acute, slightly produced, more so than in allied species, and infuscated posteriorly. Scutellum longer than wide (130:105), the basal half weakly but distinctly convex; punctures rather regularly distributed. Hemelytra more thinly and sparsely punctured, a good portion of central part of corium impunctate; clavus and inner basal portion of corium rubescent; membrane hyaline with brownish clouding apically. Connexivum not exposed; apical angles of segment 6 in female retrorsely produced and very acute, subaciculate.

Ventral surface more or less yellow fulvous, concolorous, punctures confined to propleura. No postspiracular fuscous spot on each abdominal segment as in *interstinctus;* two rather equally sized, large, deep, contiguous, infuscated fovea on sternites 5 and 6 on each side (in *interstinctus* these fovea are shallow, of unequal size, small and not infuscated). Rostrum slender, fulvous, apex piceous and reaching hind coxae; segmental ratios 20:40:40:27 (segments 2 and 3 equal). Ventral margin of mesosternal carina shallowly but distinctly sinuate when viewed laterally, anterior end of lamina elevated above posterior end. Legs concolorous fulvous, tibiae very slender. Inner margins of basal plates of female genital valves feebly elevated so that, taken together, they form a low, thin, compound, carina-like ridge. In *interstinctus* this ridge is much more elevated and stouter. Holotype, female, 9.5 mm. long to tip of membrane; 4.75 mm. wide across humeral angles.

Holotype, female (BISHOP 2742), Metizo, Guam, Mariana Is., Oct. 1957, Krauss.

DISTRIBUTION: S. Mariana Is. (Guam).